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THE RISE OF AMERICAN CITIES.

Of late years there have been many able discussions of the problems of city government in the United States.* Most of these discussions, however, have turned upon the forms of municipal governments and the dangers discernible in their workings: the existence and growth of cities have been assumed as a matter of course. Nevertheless, the fact that we have so many cities to govern is one of the most astonishing in history. Less than a hundred

*Of these may be instanced: Von Holst's *Constitutional Law*, § 102; Bryce's *American Commonwealth*, chaps. l.-lii.; Woodrow Wilson's *The State*, §§ 1030-1037; *Publications of the American Economic Association*, vol. i., Nos. 2, 3, vol. ii., No. 6; *Johns Hopkins University Studies*, vol. iv., Nos. 4, 10, vol. v., Nos. 1, 2, 3, 4, vol. vii., Nos. 1, 3, 4; *Publications of the American Statistical Association*, New Series, Nos. 2, 3, 6; W. M. Ivins in the *Political Science Quarterly*, vol. ii. pp. 291-312; Seth Low and James Parton in the *Forum*, vol. ii. pp. 260, 539; A. R. Spofford's *The City of Washington and the Growth of Cities in the United States*; Simon Sterne in Lalor's *Cyclopædia of Political Science*, vol. i. pp. 460-468; E. L. Godkin in the *Encyclopædia Britannica*, vol. xvii. pp. 462-464; Ford's *American Citizen's Manual*, Part I., pp. 66-83; F. J. Parker's *Study of Municipal Government in Massachusetts*.

years ago, the whole population of the United States was under four millions, of whom hardly a hundred thousand lived in cities. There are now at least three hundred and fifty cities, with a total population of nearly sixteen millions. Since 1790, the population of the United States has increased sixteen times; while the cities have increased in number sixty times, and the urban population nearly a hundred and sixty times.

In the causes and development of this phenomenal growth may perhaps be found an explanation of some of the complicated problems of city government. This paper will therefore be devoted to three inquiries: 1. What causes have determined the sites and distribution of American cities? 2. What has been the growth of their population? 3. What is noticeable about the status and social condition of people in cities?

At the outset, what is meant by the term "city"? The English usage, by which no place is strictly a city which has not a cathedral and a bishop, is no longer applicable even in England. To use the term for every place having a so-called "city" charter would include many an unimportant Charles City or Falls City. In New England there are often several centres of population still united under the old town government, but the aggregate is not a city in name. For convenience, the definition of the Tenth Census will be adopted: a city is any aggregate of eight thousand or more persons living under one local government.

Before noticing the rate of growth of particular cities, it is desirable to consider what causes have planted and nourished our chief centres of population. The reasons which can be given for the site of most ancient and mediæval cities are here singularly inapplicable. An Athenian or Salzburger suddenly placed in our midst would declare that this strange people had deliberately avoided the most eligible sites, and had exposed themselves to

ruin. The intelligent Athenian or candid Salzburger must quickly see, however, that the conditions of life in the New World have been different. Our cities have grown up in a time of peace. Steam power, artificial roads, and the use of large craft have changed the character of manufactures and commerce. The political importance of cities has diminished, and their commercial importance has increased. Little as he might admire the external appearance of some of our cities, even Alexander or Wallenstein might share the admiration which Blücher expressed when taken through the streets of London after Waterloo: "Mein Gott, was für eine Stadt zum plundern!"

Most ancient or mediæval cities, as Jerusalem, Athens, and Rome, were grouped about a hill; or on an island, as were Paris, Rhodes, and Venice; or on a promontory, as Constantinople; or, if in flat land, they were not immediately on the coast, as London, Pisa, Cairo. The reason was a simple one: they felt themselves in danger of attack, and sought the most defensible situations. It is not too much to say that not one city in the United States owes its growth to its protected situation. Quebec stands like a lion on its rock; but there is not, and never has been, one first-class fortress or citadel within our present limits. So far is this the case that, of the ten larger cities in the United States, six, probably seven, are exposed to attack by sea and insufficiently protected.* Military authorities assure us that a bombardment is by no means the serious affair that people suppose. Nevertheless, the prosperity of the coast cities may at any time receive a terrible blow, because other than military reasons have determined their site.

A second great reason for the location of cities applies as efficaciously now as at any former time: it is the con-

*New York, Brooklyn, Philadelphia, Boston, Baltimore, San Francisco, and New Orleans are exposed: only Chicago, St. Louis, and Cincinnati are safe.

venience of commerce. The sage observation that Providence has caused a large river to flow past every great city is as nearly true now as it was when Memphis, Babylon, and Cologne were built. As nature has determined the position of some cities by furnishing a bold and therefore a defensible site, so she has selected that of others by inequalities in the bed of streams. The site of many American cities is on a river at the head or foot of navigation, usually just above or below a fall. This is the case with Louisville and Buffalo. St. Paul marks the upper part of the Mississippi, as Troy marks the Hudson, and Duluth and Chicago the head-waters of the St. Lawrence. More often the large city grows up at the mouth of a river or near its mouth. This is the case with many of our lake cities, as Cleveland and Milwaukee; so St. Louis stands on the first high land below the confluence of the Missouri and Mississippi; Baltimore owed its early growth to the Susquehanna trade; New Orleans and New York are famous examples.

The history of the world has shown that it is much less important for a city to have the length of a great river behind it than to have a good harbor before it. Newburyport at the mouth of the Merrimac, Saybrook at the mouth of the Connecticut, have long since fallen out of the race with Boston on the Charles, Philadelphia on the Schuylkill, and Providence on the Moshassuck. It is the harbor that counts most, and not the river navigation. The further up into the land a harbor penetrates, the more valuable it is. In America, as elsewhere in the world, the point where the tidal water of an estuary meets the fresh water of a river is marked by nature for the site of a settlement. Hence the foundation of the greatness of London, Hamburg, Bordeaux; hence the importance of Norfolk, Charleston, Baltimore, and Philadelphia. New York and San Francisco alone of our large cities lie at the mouth of an estuary.

The depth of harbors was for many years of less consequence than their accessibility and protection. From the little havens of the Cinque Ports issued the wasp's nest of vessels which protected the coast of England. From Duxbury, Falmouth, and Perth Amboy sailed the East Indiamen of a century ago. The increasing size and draft of sea-going steamers have caused a concentration of trade into the few large and deep harbors, and this is doubtless one cause of the disproportionate growth of the large cities in the United States. As the coast from Nova Scotia to New Jersey contains the best harbors in the North Atlantic Ocean, the cities of that region have a natural advantage over their Southern rivals. On the other hand, the ports from New York to Norfolk, and the lake ports, have an advantage in their nearness to supplies of coal; and the advantage increases as steamers take the place of sailing vessels.

Sixty years ago, New England seemed likely to lose her commercial importance, because the mountains cut her off from direct communication with the West. It is not enough for a place to have a harbor and good communication with foreign countries in order to grow into a city. It must also have direct and easy connection with a rich country in the interior. Verona, though an interior city, has for ages lain at the mouth of the easiest Alpine pass. Trieste is the port for Southern Germany. For the same reason, Baltimore, Charleston, and Philadelphia, Chicago and St. Paul, have had a better opportunity for growth than Boston.

New York, in spite of her magnificent harbor, suffered from a mistake of the geologic forces. A glance at the map shows that the great lakes were meant to drain into the Hudson; and their waters still protest, as they thunder down Niagara, against an unnatural diversion to an estuary frozen one-half the year. To remedy the mistake of nature, the State of New York constructed the Erie

Canal, finished in 1825; and the astonishing growth of the city is the fruit of that undertaking. Philadelphia, Washington, and Richmond vainly tried to imitate this triumph. But Baltimore, by the early construction of the Baltimore & Ohio Railroad, rivalled it.

The effect of our railroad system has been to make available the best harbors, wherever found, and to make large areas of rich country tributary to the cities upon them. Boston could scarcely live from New England products alone. New York depends for daily bread on Ohio, Michigan, and Minnesota. Of the six largest cities in the country, five are the larger Atlantic ports,— Boston, New York, Brooklyn, Philadelphia, Baltimore; and they are among the most distant from the centre of food supply. The other city of the six, Chicago, illustrates another great change in modern, as compared with ancient, commercial conditions. Chicago is a great trade centre. Its site was determined by the fact that a little creek made the most convenient harbor at the head of Lake Michigan. Railroads diverged from it, railroads were built to it. It has become a distributing point for the States to the west of it. St. Paul and Minneapolis in the North-west, St. Louis and Kansas City in the South-west, owe their growth to the same cause. Their site was determined by their position on rivers, but the river trade is now infinitesimal.* Their growth is due to a network of railroads.

In the series of commercial reasons just discussed for the growth of cities, there is evident a tendency to concentrate trade. The few places which combine good harbors or a central situation with lake or river navigation, with established trade routes, with artificial means of transit, and with cheap coal, must more and more gather to themselves foreign and internal commerce. It is for

*Except, of course, the trade down the river from St. Louis to New Orleans. Even this route is now paralleled by a railroad.

these reasons that New York is and must always be the chief city in the western hemisphere.

The coast cities, however, owe only a part of their prosperity to their situation as points of exchange for foreign products. We sometimes lose sight of the fact that all our greater commercial cities are also great manufacturing cities. The first nine cities in population are the first nine in value of manufactured products. New York leads in manufactures of clothing. Philadelphia is second only to Lynn in shoes, and surpasses Lawrence in mixed textile goods. It is not merely that these cities manufacture more because they have more people: they have more people because they manufacture to advantage.

When manufacturing began on a large scale in the United States, certain inland cities grew up, because they had an advantageous water-power. Rochester and Minneapolis, and especially the towns on the Connecticut and Merrimac, owe their prosperity to the shrewdness of men who caused water to fall in an orderly manner through their overshot and turbine wheels rather than tumultuously over rocks. It is a very singular fact that the advantage of water-power sites is at present almost nothing. A high official in the Amoskeag Corporation — said to be the largest concern engaged in textile manufacturing in the world — has said that, if Manchester, New Hampshire, the seat of the works, were not already built, it would not be built for the sake of utilizing that important water-power. There are many magnificent mill-sites in the North Carolina mountains still unused and likely to be unused for many years. Where coal is cheap, steam-power is, on the whole, more convenient. Hence the growth of Fall River, New Bedford, and Providence; hence, also, the possibility of manufacturing in the large coast and inland cities, in competition with the water-powers. We all recognize that Pittsburg owes its prosperity to the soft coal near by. We less often reflect that

Baltimore, Philadelphia, and New York enjoy a similar advantage over the New England cities.

The success of manufactures and the consequent distribution of population into manufacturing cities depends, perhaps, less on the natural advantages of a place than on the skill and industry of the people. The great ease of transporting persons over large distances — an absolutely new thing in the history of the world — makes it possible to mass skilled laborers in cities. The coast cities enjoy the advantage of receiving such laborers direct from abroad, and thus in many cases they have the first choice. There is a corresponding disadvantage. Almost all the immigrants into the United States land at one of four ports,— Boston, New York, Philadelphia, Baltimore; and these cities fail to sift into the country beyond some elements which cause them great perplexity.

For the prosperity of the country it is far less important that population should grow than that it should grow intelligent. In this respect, the coast cities have some advantage. The people of great seaports have always the inestimable stimulus of direct intercourse with the world abroad and at home. Hence the population of New York is more likely to absorb new ideas than the population of Lowell or Cincinnati. In manufacturing cities, small and great, social and political problems are more difficult. Here it is possible to employ the labor of women and children. The taxes are more likely to fall upon the large corporations, and to be spent by men who have no property. The manufacturing cities, even the smaller ones, are more closely peopled than those whose greater interest is commerce.

A distinct class of cities, numerous and populous, has grown up in the last thirty years, away from the coast and from water-powers, but around mines of coal and metals, or near deposits of petroleum. Pittsburg and its neighbor Allegheny are the most important. Places like Al-

toona, Cumberland, Scranton, and Wheeling are rapidly following them. Wherever there is coal, manufactures spring up, and populous cities. Around other mines have grown sometimes strange and phenomenal places. Pithole, Pennsylvania, once a ragged, unpromising hill farm, became a city of thirty thousand people; and a few years later its handsome brick hotels and banks were inhabited by two people, and its railroad was torn up. A similar fate seems likely to overtake Virginia City, Nevada, and may possibly overtake Leadville.

In addition to the geographical reasons which have just been enumerated, there are certain other physical causes which assist the aggregation of people in a particular spot. That place which lies near a good water supply has a better chance of growth. A city which is easily drained ought to be more healthy; and a city which has a beautiful site, well improved, and a system of parks, attracts people of leisure. These causes have a smaller influence than they deserve. Philadelphia has now more than a million of people whose chief drink is Schuylkill water, and a part of whom grow up in spite of surface drainage. On the other hand, cities with fewer natural advantages cheerfully spend large sums on aqueducts or systems for pumping sewage. The less fortunately situated cities have often the best water and the best pleasure grounds. It is almost inconceivable that, of all the wealthy cities on the Atlantic coast, not one has a water-front park of any size. The growth of the population has been unexpected to itself; and the inestimable privilege of a beautiful sea-front has forever passed away. With the exception of Washington, Chicago, and Boston, I know of no city which is now making adequate provision for parks for the next generation.*

One of the causes which had most effect upon the

*On this subject there is an interesting monograph by E. R. L. Gould, in the *Publications of the American Statistical Association*, New Series, Nos. 2, 3.

growth of ancient and mediæval cities has very little operation in the United States. Corinth, Perugia, Augsburg, were little independent States. Syracuse, Florence, or Nuremberg could, on occasion, put an army of fifty thousand men into the field. The city was the unit of political life. Cities grew because the people were freer there than in the country. No such tendency has ever shown itself in America. Beyond a few angry suggestions, during the Civil War, that New York city be created into a separate State, there has been no attempt to make a city a commonwealth. No one moves from Boston to Philadelphia to escape a tyrant's rule. No County Democrat is exiled because Tammany has the upper hand. The cities are subordinated to the States. It is hard to see how it could be otherwise; but that dependence upon the State has brought a danger into our municipal system. The well-meaning people of the cities have come to look to the State government as a *deus ex machina;* they expect more from a change of charter than from a change of heart. I am strongly of opinion that, if the people of New York City were left to themselves, and could get no relief from Albany, they would have to-day a better, cleaner, and more economical government, and that the much more satisfactory government of Boston would be improved if the responsibility for it were thrown wholly upon the Bostonians.

When a city is once started, it is likely to grow from the mere force of gravitation. It is more than a figure of speech to use the terms which suggest the superior attractiveness of city life. What else is "politics" than what the people of the πόλις do? What is the "urbane" man but the dweller in the *urbs*, and the "pagan" but the unconverted dweller in the fields? Nor is it the higher and more intelligent class which is most attracted by city life. Where one person is drawn to a city by schools, churches, concerts, libraries, and theatres, five are drawn by the ex-

citement and stir and activity of a city. One of the greatest problems of modern times is how to get people out of the exhausting or despairing life of cities into the quiet and comfort of villages. And while the country life of Newport, Lenox, and Manchester-by-the-Sea, attracts a certain class for a season, annually more extended, an increasing number of well-to-do people leave the smaller towns in which they are first in wealth and influence, to engage in a doubtful struggle for recognition by people of greater wealth and social power in the great cities. One city in the Union, the most beautiful of all, and the capital of the nation, owes its growth in considerable part to its attractiveness for people who can live anywhere they like.

The importance and the beauty of Washington, however, are chiefly due to another cause of growth, the last here to be discussed. It is distinctly an artificial city, a creation rather than a growth. There have been times when the will of a despot has caused the walls of a new city to rise. Alexander built almost as many cities as he destroyed. The will of the sovereign people has also established cities, and of these Washington is the principal one. Some city was likely to grow up on the lower Potomac, but that it should be Washington rather than Alexandria is due only to the combination of political forces which determined the site of the national capital,—the assumption question, the arrival of the North Carolina members, and the compromise arranged between the astute Hamilton and the too confiding Jefferson. Several considerable cities have been built up in like manner by votes of State legislatures or conventions. Harrisburg would be no more important than Lancaster but for the Pennsylvania capital. Columbus, Ohio, has few natural advantages. Jefferson City, Missouri, would be a hamlet if the legislature had never met there. The smaller centres are powerfully affected by such political distinctions.

A few months ago, the people of a Kansas county were seen with arms in their hands settling the location of the county seat, or bodily moving houses from one would-be city to another.

The site of Indianapolis was fixed near the centre of gravity of Indiana; but its growth is due to another artificial cause, peculiar to new countries like America. It is the centre of a great system of radiating railroads; and it has grown, while Cairo, at the confluence of the Ohio and the Mississippi, has decayed. To create a city by converging railroads upon a spot in the wilderness is not always possible; but, when such a centre is formed, it draws population to itself. There was a time when the established towns objected to the noise and bustle of railroads, and compelled them to avoid their limits. Thus the Boston & Lowell Railroad was obliged to steer between old towns like Woburn and Wilmington. Now towns strive, compete, and tax themselves to bring a railroad; and Woburn and Wilmington are glad to have even branch connections. The location of the first repair and construction shops makes the nucleus of a town or an addition to an existing town. A positive and even whimsical influence has been exerted by railroads in their choice of termini. But in the long run the railroads must go to the cities, and not the cities to the railroads. Racine and Superior City and Dunkirk are discouraging examples to the company which proposes to create a city by ending there.*

The effect of railroads upon the older cities, possessed already of inalienable advantages, has been more striking than in the creation of new cities. When the Alleghanies were pierced, the Western commerce poured down into the

*An interesting example of the power of a railroad over urban growth was shown a few years ago in the building of the Yellowstone branch of the Northern Pacific. An enterprising man had secured the quarter section at the bottom of the valley where the road must end. Failing to make terms with him, the company took up the upper end of its track, and established its terminus two miles farther down.

termini of the railroads. The keen eye of Calhoun early saw that the ship must come to meet the car, and he earnestly advocated a great railroad from Charleston northwestward. But Baltimore, and a little later Philadelphia, had Western lines years before Charleston or Mobile or Savannah or Norfolk or Richmond, and even before New York, Boston, Portland, and Montreal. The passes now occupied by the New York Central, Pennsylvania, Baltimore & Ohio, and Chesapeake & Ohio Railroads, are as much trade routes as the Suez Canal or the Bosphorus. No rival roads can compete on equal terms, and no neighboring cities can outstrip the termini of these great trunk lines.

Another form of artificial stimulus to city building has had little influence in the United States. A colonized and colonizing country, no cities have been built up by distinct, elaborate schemes of colonization. Settlements like Marietta have not grown to the dignity of cities. Settlements like Rugby have failed for want of adaptation to the circumstances.

The principles upon which the growth of cities depends, as described in this paper, may perhaps be seen more clearly by applying them to a few specific cases. New York was first settled because it was an island,— a state of things which the people have since attempted, at great cost, to remedy. It is susceptible of defence against modern forms of attack, though at present its defences are little more substantial than that fear of torpedoes and rumor of a novel steam-craft which kept the British out in 1814. It has the best deep harbor on the Atlantic coast, easy of access for the largest vessels in the world. It is the Mecca of most imports. It lies at the end of a magnificent chain of internal navigation, reaching to Chicago and Duluth, and is the centre of some of the greatest railroad systems in the world. Further, it is the recognized financial centre of the United States.

Commercially, therefore, it has no rival in the United States, and can never have any till the hills sink down behind Boston and Philadelphia, as they do in the Mohawk Valley. The nearness of coal, and the abundant supply of labor of all kinds, give it a great advantage as a manufacturing city. New York, with its adjuncts, Brooklyn, Jersey City, and other near cities, has nearly three million people, and is already the second centre of population in the world. It has few artificial advantages. It is not the capital of the State or nation. It is divided by arms of the sea from two of its three systems of railroads. It does not attract people by the character of its government. It is the largest city because it has the largest opportunity.

Boston, despite its great natural advantages, is a great city, chiefly because of the character of its leading men. Like New York, it is defended from foreign enemies only by a sense of what is proper among gentlemen. The harbor is a fine one, though not easy to enter for large vessels. Its eminence depends less on the Western business than on the fact that it is the supply point for considerable parts of New England. Indeed, it is the intimate connection with the business of all New England which makes Boston so important. As a manufacturing centre, it is first in nothing, and only third in curried leather and women's clothes. But it is the centre of administration for the New England mills, and every pound of goods manufactured pays its tribute. It gets its share of immigration from abroad, and more than its share of people from other communities in the United States. The natural beauty of the city is an attraction, greatly aided by the park and other improvements. More than any other city in America, it draws people to it by the excellence of its schools and libraries, and by the public spirit of its citizens.

Chicago is great both from natural and artificial causes. It is not exposed to foreign attack. The head, in that

direction, of the magnificent lake water-ways, it is practically the Western terminus of the Erie Canal, and the most important station on the great trade route from New York to the Pacific Coast and Eastern Asia. Still more important, and the foundation of the wealth of Chicago, is the great valley of the upper Mississippi, the most fertile large area now occupied by man. Special manufacturing advantages it does not possess, save that Ohio and Pennsylvania coal form a return cargo for its grain fleet. These commercial reasons completely compensate for the natural disadvantages of the place, and the tremendous energy and skill of the people of Chicago will soon make it and keep it the second city in the Union. It was this energy which early caused the railroads to stretch out like *antennæ* to the West, and which then foresaw the necessity of a like connection with the East. It is fortunate for the people of the city, and of other cities likely to imitate it, that this restless vigor is now hastening to beautify a city of which the site has few natural advantages. Handsome houses, beautiful parks, imposing public buildings, great libraries,— in these Chicago bids fair to surpass most of her older rivals.

The second series of questions to be examined in this paper concerns the numbers of the people in American cities.*

The total number of "cities" within the census definition — an aggregation of eight thousand or more persons

*On this subject, the most valuable source is, of course, the Census Publications. Mr. E. C. Lunt, in the *Key to the Publications of the United States Census*, 1790–1880, published in 1888 by the American Statistical Association, has prepared a valuable comparative index to the forty odd volumes and to much other statistical literature. For the purposes of this paper, four volumes of the Tenth Census (1880) are especially useful. They are: Vol. I., on Population; Vol. II., on Manufactures; and Vols. XVII. and XVIII., on Social Statistics of Cities. A part of the tables are reproduced in the briefer *Compendium of the Tenth Census*. Some of the material is restated in Scribner's *Statistical Atlas*, with illustrative charts (New York, 1885).

Massachusetts and New York have, at the middle of each decade, quin-

living under one local government — is shown in the Appendix. The increase has been much more irregular than that of the total population of the country. From 1790 to 1840, the increase was comparatively slow. In the next decade, 1840–50, as many cities were added as in the previous half-century. The explanation is to be found in two facts,— the development of the first system of Eastern and trans-Appalachian railroads, and the beginning of immigration on a large scale.* The same causes increased the cities during the decade 1850–60 from 85 to 141. The Civil War rather stimulated than retarded the growth of cities of all sizes, and raised the total number by 85. A steadier growth of 60 in the years 1870–80 made the total of 286.

In the same table (Appendix, I.) is found a classification of cities by size. Nearly two-thirds (186) may be classed as small cities, having less than 20,000 people. The cities of medium population, from 20,000 to 40,000, make up about one-fifth of the whole number. In this proportion there has been for some decades a gain. The large cities, having more than 40,000 people, were 45 in number in 1880, and have been for some decades pretty steadily a sixth of the total number.

The change in proportions has brought about a corresponding change in the average size of our cities.† In 1800, it was 35,000. In 1850, it had fallen to less than

quennial censuses of great value. The New York census of 1885 was omitted, owing to a political disagreement.

The *World Almanac* contains an excellent estimate of the present population of the great cities.

For cities outside the United States, the most convenient summaries are found in Mulhall's *Dictionary of Statistics*.

In the Appendix to the *Annual Report* of Mr. W. E. Foster to the Trustees of the Providence Public Library for 1888 are valuable tables on the present population, wealth, and valuation of cities.

*The railroad mileage was, in 1830, 23 miles; in 1840, 818; in 1850, 9,021. Immigration rose from 23,322 in 1830 to 310,004 in 1850.

† See Appendix, Table II.

32,000. In 1880, it was 39,500. Or, to state it in other terms, the medium and large cities attract more than their share of the total growth of city population. In the Eastern and Middle States, the formation of centres of population is about completed. Henceforth population will grow about them rather than form new nuclei.

The 286 cities in 1880 are, of course, to be found most abundantly in the most populous parts of the country,—New England, the middle coast States, the region just south of the Great Lakes. But the distribution of cities is far from being the same as that of the population. New England, with less than one-twelfth of the total population of the country, has nearly one-fourth of the cities and quite one-seventh of the urban population. New York, New Jersey, and Pennsylvania, taken together, contain one-fifth of the people of the United States, about one-fourth of the cities, and two-fifths of the urban population. The six coast States from Virginia to Florida contain one-eighth of the population, one-sixteenth of the cities, and one-thirtieth of the urban population. In 1880, as many people lived in Boston alone as in all the cities of those six States. A still more striking contrast exists between New Jersey and Mississippi. The States had almost exactly the same population (1,100,000). Of these there lived in New Jersey cities 500,000; in Mississippi cities, 11,814.

Not only do the large cities gain on the smaller, but the cities, as a whole, gain fast on the population outside of the cities.* In 1790, the city population was but one-thirtieth of the total. In 1860, it was 5,000,000 out of 31,000,000, or nearly one-sixth. In 1880, it was nearly a fourth. This is a most significant and fundamental fact; for it means a gradual change of the basis on which our institutions rest. The republic was founded for a country largely agricultural, with a diffused population,

*See Appendix, Table II.

having means of easy subsistence. I believe that it will soon need to stand, and will stand, for a population of which one-half lives in towns of 4,000 inhabitants or upwards. The present proportion of one-fourth is by no means alarming. It is, to be sure, more than that of Italy, or France,* and is not much under that of densely populated Belgium or Holland. But it is rather less than that of Australia, where the conditions are very similar, and not half that of England. Improved methods of agriculture, systematized transportation and distribution, make it possible to feed and to keep contented masses of population which would have broken down any mediæval government.

Next in importance to the question of the total population in cities is the question of the comparative growth of great cities. Here, as in the former case, may be clearly seen the effect of the development of water-ways from 1820, and of railroads from about 1830. Up to 1820, Philadelphia was the first city in the Union; and in that year it was found to be the first American city having a population of more than 100,000,—a distinction shared with nineteen others in 1880, and with at least twenty-five to-day. The Erie Canal was finished in 1825: the effect is seen in the rapid leap of New York from 108,000 in 1820 to 209,000 in 1830. Thenceforward it has been the undisputed metropolis of the Union. By a careful estimate, based on the presidential votes of 1880 and 1888, New York has to-day not far from 1,600,000 people,† and in 1890 will have a population little short of two millions, or about that of all the New England and Middle States in 1790. Philadelphia has kept a steady upward course, and numbers now at least a million. But Philadelphia,

*An elaborate comparison is made in Mulhall's *Dictionary of Statistics*, p. 36.

† This and succeeding statements are derived from estimates based on electoral votes, directories, and other material, collected in Appendix, Table III.

unlike New York, has greatly extended her limits of late years, and thus has swept in adjacent centres of population.

Brooklyn is a phenomenon among the world's cities. Lined with wharves, it can hardly be called a commercial city; abounding in factories, it is not eminent for manufactures. Its independent life is dwarfed by that of its great neighbor; and the social and political activity of this city of 782,000 people is decidedly less than that of its nearest rival, Chicago. The table shows clearly the rocket-like growth of this latter American wonder. In 1820, Chicago had no population worth considering; in 1840, it timidly appears in the census with 5,000. Lake navigation, the stimulus of Eastern and Western railroads, the Civil War, the control of the trade of the great North-west, have brought Chicago up to the fourth rank of American cities, and it is likely eventually to take the second place.

The next two cities have been close rivals in population for a hundred years. Baltimore and Boston have been much alike in situation, in relation to the country back of them, and in enterprise. Boston had 18,000 to Baltimore's 13,000 in 1790. From 1800 to 1870, Baltimore drew ahead. In 1880, notwithstanding the fire of 1872, Boston had taken a leap. In the last eight years Baltimore has gained immensely, and now leads Boston by 75,000.*

It is now to be expected that St. Louis also will surpass Boston in numbers. The growth of that city has been retarded by the slower development of the South-west as compared with the North-west, and by the decline of the Missouri navigation and the decay of the Mississippi trade. New Orleans has suffered from the same cause.

Besides the cities mentioned, there are three centres

* Annexations of territory, first by Boston, then by Baltimore, have complicated the question.

likely henceforth to be of very great importance. San Francisco enjoys the only really good harbor between Puget Sound and the Straits of Magellan. Were the fertile country back of it as broad as that back of New York, it would rival the metropolis. It must certainly become one of the world's great cities. Kansas City has advanced from 32,000 in 1870 and 56,000 in 1880 to a claim of 185,000 in 1888. By its direct connections eastward, it is drawing business which would otherwise go to St. Louis, and is becoming an intermediary of the South-western trade. The same state of things exists in the North-west. St. Paul and Minneapolis together had 33,000 in 1870 and 58,000 in 1880. They have now a population of nearly 300,000, and confident claims of 442,000. They have thrust themselves between Chicago and the far North-west, and are likely to form one of our greatest cities. They, too, have secured direct Eastern roads; but, as these roads pass through Canada, the rapid growth of the dual city is leading to serious complications of international trade. A growth such as these cities show is without parallel in the history of the world. The same influences, of railroads and of vast movements of commerce, have been at work abroad. London, Berlin, Paris, have gained enormously; but Paris, which may have at present a population of 2,500,000, had 550,000 in 1800, and nearly 2,000,000 in 1870.*

In this eager current of growing population there are some eddies. Even in America, some considerable cities are stationary or moving backward. This has been the case with some of the smaller New England seaports, and would have been the case with all, but for the sagacity of the New England men who turned into manufactures the profits of the India trade and of whaling. In 1870, Newburyport had 11,000 to Brockton's 8,000; in 1880, Brockton had gained 5,000, and Newburyport but 1,000. Mil-

* *Encyclopædia Britannica*, 9th edition, vol. xviii. p. 277.

ford, Mass., fell off from 9,900 to 9,300. Oswego, N.Y., gained by 200, and Poughkeepsie by 100, on 20,000.

That the tremendous growth of our cities, particularly of the greater ones, is very unfavorable for municipal government, hardly needs assertion. The increase of numbers means that the people and the city government never keep pace with their own necessities. Cities outgrow their charters, as boys outgrow suits of clothes. The digestive organs of the civil body are constantly overtaxed; comprehensive schemes of improvement become too small. New-comers never feel the same pride, the same sense of ownership and responsibility; and the influx of strangers hastens that crowding of experienced men out of public life, which is one of our most disagreeable public ills. But the problem must be met. The good citizen of Boston must make plans for a population of a million, and for a growth of municipal skill sufficient to control that number. New York must maintain a popular government able economically to care for four millions. The danger to free institutions keeps pace with the growth of the population of great cities.

It is a noteworthy fact that in Oswego the foreign-born population in 1880 was less by 1,500 than in 1870. This fact points to the third part of our inquiry, the derivation of city population. There are three sources from which our cities are fed: first, from their own natural increase; second, from an influx of native Americans from outside; third, from an influx of foreigners. A fourth element, which needs to be taken into account in some cities, is the colored population, which corresponds in many respects to the foreign element.

The proportion of foreigners to the total population of the country was in 1880 about 13 per cent.; but the proportion in cities and towns of 4,000 and upward was no less than 27 per cent. In other words, the cities and towns, which have but a fourth of the population, have

more than half the foreigners. The proportion is even more startling as we compare groups of cities. The general proportion of 27 per cent. holds good for the medium cities of 75,000 to 200,000, taken together; while the smaller cities, from 75,000 to 40,000, average only 24 per cent. This is made up by the fact that the large cities of 200,000 and upward attract a number relatively so much larger that 32 per cent. of their population is foreign born.

The case is even worse with certain individual cities. Boston had 30 per cent. in 1880, 34 per cent. in 1885. New York in 1880 had 40 per cent., a proportion since somewhat increased. In some of the New England factory towns, the foreigners were as many as 48 per cent. In Holyoke and Fall River, they had increased to 50 per cent. in 1885, and are probably increasing. Chicago is popularly supposed now to be more than half foreign, but no figures can be given.

The absolute numbers of foreigners in cities vary in ratios widely different from their total population. Thus in 1880 Atlanta and Lynn had almost the same population. In Atlanta there were 1,416 foreigners, in Lynn 7,040. The foreign population of Toledo and Washington was about the same, but the latter city had thrice the people of Toledo. Fall River, Paterson, and Troy were notable for large numbers of foreigners. The great interior cities, Milwaukee, Detroit, Cleveland, Buffalo, had within their borders each from 40,000 to 60,000 foreigners. San Francisco had 104,000, a startling proportion of 45 per cent. to the whole. But these numbers are insignificant beside the 177,000 of Brooklyn, the 204,000 each of Chicago and Philadelphia, and the vast multitude of 478,670 in the city of New York.

If we go a little farther into the details of nativity,* some curious facts appear as to the preferences of different

*See Appendix, Table V.

peoples for particular cities or kinds of cities. The Orient sends 23,000 to San Francisco, but only 5,000 to the fifty other cities of greatest population. The Scandinavians show no preference for the great cities: they are no more common there than elsewhere in the country. 380,000 Germans dwell in the ten largest cities, and make up 8 per cent. of their population. This is about twice their average throughout the country. Boston is least beloved by them; New York, Chicago, St. Louis, and Cincinnati, most. A third of all the French in the United States may be found in the ten great cities, which have but a tenth of the total population. Of the 1,800,000 Irish, no less than 600,000 inhabit the same ten cities; and 230,000 more dwell in the next forty cities. Nearly half the number of this race have therefore chosen cities of more than 40,000 people. Within the ten cities, one person in eight is Irish; outside them, one person in thirty-six. The natives of Great Britain are as frequent outside the cities as in them. Of the 710,000 British Americans in the country, few are found in large cities, but a much greater number in the smaller manufacturing places, where the French Canadians congregate. The Hungarians, Bohemians, Poles, and Italians were few in number as late as 1880. Since that time there has been a great immigration of all these races. In Boston, New York, and especially in Cleveland, Detroit, and Chicago, colonies are to be found in which few persons understand English.

It is evident from the above analysis that the large cities, which most need efficient government, are precisely those which receive an undue proportion of immigrants; and they are, moreover, most attractive to those immigrants who are least accustomed to self-government and least amenable to mild restraint.

That ignorant immigrants are not the only hindrances to good city government is shown conclusively by the case of Southern cities. New Orleans, though a seaport

of large trade, has but 20 per cent. of foreigners. Baltimore, by far the largest and most energetic of Southern cities, has but 17 per cent. In all these cities, the colored element takes the place of the foreign. The native white population of Baltimore is about the same as in Boston, —a little over two-thirds of the whole,— while that of Philadelphia is nearly three-fourths. In a few of the smaller Southern cities, the blacks actually outnumber the whites. This is the case with Selma and Montgomery, Alabama; with Wilmington, North Carolina, where the black population makes up about 60 per cent., and notably with Charleston, where it is about 54 per cent. For reasons better understood in the South than in the North, the negro vote seems to cause little difficulty in municipal elections.

The proportions of foreign and of colored elements have been much studied. Less attention has been paid to the very important question, How many dwellers in cities were born in other parts of the United States? For a definite answer to that inquiry, figures are not attainable. But the Census shows how many people in each of the greater cities were born in another State than that in which the city is situated. As people born in a city who afterwards reside elsewhere to some extent offset those born within the same State, who afterwards came into the city, these figures may be taken as representing approximately the drift of the native born towards the cities.*

The great cities which have proved most attractive to people from other States are Chicago and Boston. While such American immigrants form but one-fifteenth of the population of New York and one-ninth of that of Philadelphia, they make one-fifth in Chicago. The case of Boston is even more striking. In 1880, 52,000, or one-seventh of the population, had been born in other States than Massachusetts. The census for Massachusetts for

* See Appendix, Table IV.

1885 shows that about 40,000 people have come into that city from other parts of Massachusetts. The astonishing result is that of 362,000 people at that time in Boston only about 135,000 were born in the city itself; 90,000 were native Americans, elsewhere born; and 114,000 were foreign-born. The city most remarkable of all for this magnetic quality is Washington. Of the native whites living there in 1880, one-third were born outside the city.

The movement thus vaguely indicated is one of the three great elements in the rapid growth of the cities,—a rapid natural increase, due to easy conditions of life; a rapid immigration; and an influx from the surrounding country. But the first two of these causes harm only the cities themselves. If a city's children increase faster than its schools and workshops, the curse falls on the city. If immigrants outvote and control the native whites, the injury stops with the city limits. But the farmer's boy or the mill-hand who comes to the city brings force and energy, of which he deprives another part of the country. The cities draw not only the worst, but the most promising elements. The desertion of the New England hill farms is due chiefly to the better opportunities of the city. The nation gains, for the same persons have a larger field; but the process means that the political control of the farmers must some time fail, and that the people of the cities are eventually to be the great controlling force in the affairs of the nation.

From the statistics analyzed in the preceding paragraphs, it is evident that in no important American city is there any danger that the foreign will outnumber the native born element. Even in New York, the proportion has risen little above 40 per cent. Nevertheless, a closer examination will show conclusively that most of the great cities are now dominated by foreigners, and will be dominated by their descendants. In Boston, for example,

there were, in 1885, 275,000 American born persons to 132,000 foreign born. But of the natives 137,000 were minors; while of the foreigners only 12,000 were minors. The number of foreign born and native adults of voting age was almost exactly the same for each element. The children of the 120,000 foreigners are certain to be as numerous as those of the natives. Indeed, the 120,000 native born persons must include thousands of sons and daughters of foreign parents. The future of Boston, therefore, depends not upon the children of the Puritans, but upon the children of the stranger.

The excess of adults over the normal proportion in our cities is indeed startling. In the United States, as a whole, notwithstanding the large immigration of adults, the number of persons between the ages of 15 and 20 is still larger by a fourth than that of persons between the ages of 25 and 30.* In Boston, however, the number of persons from 20 to 29 is greater by 18,000 than that of persons from 10 to 19.† We should know without statistics that this must be the effect of immigration. The statistics tell us of the thousands of recruits from the country and the many more thousands from abroad. At every age, adult foreigners in Boston are hardly less numerous than adult Americans; and from the ages of 40 to 60 they are more numerous. That government is not entirely in the hands of foreigners is due to the fact that they are of many nationalities, and cannot be brought into the same parties or political combinations. In New York, however, the domination is much more evident, both because of a higher state of political barbarism and because of greater relative numbers. Table VI. in the Appendix shows in round numbers the state of things in 1875. At all the ages above 29, the foreigners are vastly more numerous. Of five persons above the age of 35 years whom

* *Tenth Census*, vol. i. pp. 548, 549.

† See Appendix, Tables VI. and VII., for figures on this subject.

we might meet hap-hazard on the streets in 1875, the chances were that four were born abroad. That the leaven of the American system of government working in this mass can keep the body politic from decay is a most striking proof of the power of an intelligent minority and of free institutions.

In the cities, as in other parts of the country, the proportion of foreign born persons must very soon decrease. The stream of immigration in the fifties added 2½ per cent. yearly to our numbers. At present, though still great in volume, it adds less than 1 per cent. It is probable that New York will never again have such a large proportion of foreigners. But here, again, it is the children of foreigners who are next to assume control, and their children who will maintain it. A precise statement as to the number of native persons in New York City one at least of whose parents was a foreigner cannot be obtained. It is probably not far from half. New York, then, in 1880, must have had 70 per cent. to 80 per cent. of foreigners and children of foreigners. The wealth and greatness of the city distinctly show that energy and skill are not confined to the native elements. The real question seems to be how far the sons of foreigners will become Americans, how far they will adopt the language, habits, interests, political aptitudes, which are presumed in the citizens of a free republic. In New York some elements, as the Italian, show a troublesome tendency to form colonies, in which even the language remains foreign. In 1880, the Irish numbered 200,000. The German, Scandinavian, and English elements were about 220,000. There seems reason to hope that the last group, at least, will speedily be absorbed, and that their children will be Americans, and nothing else.

Inspection of the tables showing the status of Boston and New York brings out a very remarkable phenomenon. As in many parts of the East, the women decidedly outnumber the men; but this excess is due almost entirely to

foreigners. In Boston, the native males are 127,500, and the native females are 130,500. The foreign born males are 59,000, and the foreign females are 73,600. Or, to put it into more popular form, two American girls out of a hundred could find no American husband; but thirteen foreign born girls out of a hundred could find no mate among foreign born men. Not only is this excess peculiar to the foreign element, but it is especially noticeable in the ages from 15 to 29. In New York, the surplus of foreign born women over men between those ages alone was 17,000. The only plausible explanation is that large numbers of foreigners come into the cities to enter domestic service. Others, perhaps, find more employment for the poorly paid labor of women than is possible in smaller places. A still more unaccountable complication in New York is the excess by 5,000 of native girls of 15 to 19 over boys of the same age. It is not possible from the statistics to learn whether this is caused by an exodus of young men or by the crowding into the city of American girls.

The questions both of age and of sex have a serious bearing on the welfare of cities. At present, the great cities have an abnormal proportion of adults. During the next forty years, the proportion of children will steadily increase. Schools already crowded, and systems of education which ought to be outgrown, will become even more inadequate. The great problem how to deal with homeless children will be still greater. The excess of foreign born women will have an important bearing on the new question of woman suffrage. The effect of that change, if carried to its full and logical extent, must inevitably be still further to increase the foreign vote.

Allusion has already been made to the political effect of the colored population of Southern cities. The social effect is even more marked. There is, of course, no prospect that the dark race will be absorbed; and the problem is therefore a permanent one. Even in cities like

New York or Boston, in which not one person in sixty is colored, distinct colored quarters have been formed and will be continued. In the Southern cities, the maintenance of separate schools tends to prevent that harmony of feeling between the races which is the essential of stable society.

We may now summarize briefly the conclusions reached in this study of the conditions of city planting and city growth in the United States: —

The situation of cities depends chiefly on natural causes; but, once planted, the larger places have power to profit by artificial stimuli, such as immigration and railroads.

The great cities of the future must grow up out of present cities, large or small. There will be no more surprises, except, perhaps, in the Puget Sound region.

The tendency of systematized transportation is to cause the large cities to gain faster than small ones.

The tendency of modern life is to cause the cities to gain on the general population.

Since no sufficient pains has been taken to provide for the future, crowding and its associated evils are likely to be more prevalent.

The government of the cities is likely to improve with experience and the education of the community.

Most foreign elements will eventually be absorbed; but the effects of their former existence will be seen in a type of character in cities different from that found in country regions.

The children of the present foreigners, and their descendants, will be the rulers of future cities; and the great unsolved problem is, What are they to be?

The hope of the cities is in the generation to come, and the best service that a reformer can render is to aid in putting right examples and right principles into the minds of the children.

ALBERT BUSHNELL HART.

THE PROHIBITION OF RAILROAD POOLS.

Of all the clauses of the Interstate Commerce Law, the one which forbids pooling probably has the widest economic interest. It is a legislative experiment of the highest importance. It deals with a question which will occupy the public mind in the future even more than in the present. The problem is not confined to railroads. It has had its first and fullest development at this point, because railroads have a larger invested capital than other industries; but it is making itself felt in manufacturing industries, with a force constantly increasing as their capital becomes larger and more concentrated. The success or failure of the law against railroad pools may enable us to predict to some extent the fate of similar attempts to suppress combination in other industries.

There have always been plenty of private reasons which make a trade combination seem attractive to those who engage in it. These very reasons for the most part make it desirable from a public standpoint that they should not engage in it. This has been well understood ever since the days of Adam Smith. The peculiarity of the present situation is that there are certain special reasons, unknown to Adam Smith and Ricardo, which sometimes seem to justify combination on public grounds instead of private ones,—reasons which, to say the least, render a direct prohibition highly unwise. Our experience under the present law gives us a good chance for testing the force of these arguments by actual facts.

Everybody admits that stability of prices is a desirable

thing. Adam Smith defended competition, because it would tend to produce such stability. If a temporary scarcity made prices too high, other producers would come into the market, and bring them down: if they were brought below the cost, the producers would contract their operations and prices would again rise. Neither of these things happens in the case of an industry with large invested capital. The owner of such a concern will not go out of business or seriously restrict his production, as long as the return more than covers the expense of wages and materials, even though it leave little or nothing to pay interest and repairs. He will go on at a loss, because it involves a worse loss to stop. The question is not whether it is profitable to do business at existing prices, but whether it is less unprofitable to keep on than to abandon the contest. It is not because competition in such industries is more intense than in others: it is because it brings rates down to a standard far below cost of service. Such a result cannot continue indefinitely. Sometimes it is stopped by agreement or consolidation; sometimes it continues until a part of the concerns are driven out of business. In the latter case, which is occasionally exemplified in the iron industry, we are apt to have a period of artificial scarcity, when famine prices prevail for months at a time.

There can be no doubt that railroad competition does act in the manner described, bringing rates too low to pay interest and repairs. This was proved in Wisconsin in 1874, when all rates were reduced by law to the level of competitive ones, and the railroads were actually unable to pay interest. It is shown, to a greater or less extent, in all periods of active railroad warfare. Of course such a state of things cannot exist permanently, and at all places. It involves great fluctuations, from time to time, and great discriminations between one place and another.

In the years immediately preceding the formation of the

trunk line pool, fourth-class rates showed the following series of maxima and minima: *—

1869, July 1,	82	cents per 100 pounds.
August 7,	25	" " " "
November 1,	80	" " " "
1870, July 25,	45	" " " "
December 26,	80	" " " "
1871, September 2,	30	" " " "
December 15,	65	" " " "
1872, August 1,	45	" " " "
October 14,	65	" " " "
1873, August 13,	30	" " " "
1874, January 1,	60	" " " "
July 24,	45	" " " "
1875, January 20,	60	" " " "
December 22,	20	" " " "
1876, January 10,	45	" " " "
June 12,	16	" " " "

On the other hand, during the periods when the pool was in effective operation, rates were maintained at 40 and 35 cents, with little fluctuation except when the organization itself was shattered by a railroad war.

The discriminations made between different places and different individuals are too well known to need citation. Nor was a mere agreement between presidents or managers, as to the rates to be charged, sufficient to prevent these results. Such agreements could always be violated by irresponsible agents; and these violations, however inevitable they might be, gave rise to mutual suspicion. Interested parties could turn this distrust to their own account, and could often secure favors which they ought never to have received. It was this state of things which enabled the Standard Oil Company to acquire its commanding position. Had there been a railroad pool, some chapters in the history of the oil business would have been changed for the better. What a pool or division of

* *Statistics concerning the Movement of East-bound and West-bound Traffic over the Trunk Lines*, by Albert Fink. New York, 1884.

traffic really does is to enable a rate agreement to be effectively carried out. Some irregularities of rates will doubtless continue; but the pool prevents them from being beneficial to the road which practises them, so that they do not become intensified or lead to violent fluctuations. As compared with the extreme results of reckless competition, pooling furnished an unquestionable gain. This was admitted by so severe a critic of railroad management as Mr. Simon Sterne.*

Under these circumstances, pools were slowly making their way towards legal recognition. Their status varied greatly in different countries. On the continent of Europe they were not merely tolerated, but encouraged. This was especially the case in states like Belgium or Prussia, where the government owned part of the railroads. The necessity of pooling as an administrative measure was so strongly felt that any legal objections were cast aside. State roads divided traffic or earnings with private roads and even with water routes. An agreement between rival lines with regard to percentages was considered as natural and inevitable as an agreement between connecting lines with regard to through rates.†

England had not advanced so far in this direction as Germany or France, but much farther than the United States. She had begun with an extreme reliance on free competition. The first railroads were chartered and built with the idea that they should be used like turnpikes or canals, open to all carriers on payment of toll. It took but a few years to show the impracticability of this scheme. The plan of parallel railroads was next tried. This led to the crisis of 1847, in some respects the most severe in England's recent financial history. It is to the credit of the English courts that they learned so quickly

* *Report of the Senate Select Committee on Interstate Commerce; 49th Congress, first session* (1885–86), *Report No.* 46. *Testimony*, pp. 71, 76.

† Schreiber, *Tarifwesen der Eisenbahnen*, pp. 235–242.

the futility of trying to rely on railroad competition. While they did not actually sanction pools in the way the Germans did, they assumed an attitude of toleration which was all that was needed for the growth of the system. Prominent statesmen, among them Mr. Gladstone himself, acted as arbitrators in pooling awards.

America was necessarily a generation behind England in this development. England built so many railroads in 1846 that she learned the folly of parallel railroad construction at that early date. America has hardly learned it yet. England's general business ran in well-understood lines, which made it easy to know what share of the competitive traffic each railroad deserved. In America new districts and new industries were being constantly developed: this necessitated new awards, and furnished constant occasions for dispute. In spite of such hindrances, the system forced its way into public recognition. At the outset, contracts for division of traffic had been treated like gambling contracts; that is to say, as being no contracts at all. As time went on, there was a strongly marked tendency to drift towards the English practice. Its results had not taken very definite shape; but, had the passage of the Interstate Commerce Law been delayed two or three years, we should probably have seen Federal decisions which would have placed us nearly on the English ground.* The opinion of impartial men at that time is well exemplified in the Report of the Senate Select Committee on Interstate Commerce:†—

> The effect of pooling under a wise system of regulation cannot, perhaps, be fairly judged by its operation in the past under entire freedom from legislative restrictions. Nor can it be safely assumed that it would be subject to the same objections and give rise to the same complaints under legislative regulation as it has under the con-

*For an account of the somewhat chaotic state in which the matter stood in 1884, see Judge Cooley's pamphlet on *Popular and Legal Views of Traffic Pooling* (Chicago, *The Railway Review*).

†*Report*, p. 201.

ditions which have heretofore governed its operation. In any event, the evils to be attributed to pooling are not those which most need correction, and, if agreements between carriers should prove necessary to the success of a system of established and public rates, it would seem wiser to permit such agreements rather than, by prohibiting them, to render the enforcement and maintenance of agreed rates impracticable.

Still more marked was the language of Judge Deady of the United States Circuit Court, in May, 1885, in his opinion on the petition of Richard Koehler, receiver of the Oregon and California Railroad: —

Pooling freights or dividing earnings is resorted to by rival and competing lines of railway as a means of avoiding the cutting of rates, which, if persisted in, must result in corporate suicide. It is not apparent how a division of the earnings of such roads can concern or affect the public, so long as the rate of transportation on them is reasonable.

Less conservative counsels prevailed. Much of the support of the Interstate Commerce Act came from men avowedly hostile to corporations. To these men, the mere fact that railroads wanted pools was sufficient reason for prohibiting them. There were many others who, without going so far in unreasoning hostility, believed that the prohibition of pools was necessary for the purposes in view. If discriminations were forbidden and pools permitted to go on, they feared that the railroads would abolish discriminations by a simple process of levelling up; and that the usual effect of such an act would be, not to lower, but to raise the general scale of railroad charges. And even among those who were not strongly opposed to pools there was a wide-spread belief that the prohibition would do little or no harm. Such men admitted that pools had been necessary in the past, when there was no other means of preventing discrimination; but they thought that the provisions of the Interstate Commerce Act, by prohibiting discrimination, would take away the need of pools. Others, especially

among the railroad men, thought that the possibility of evasion would be sufficient to prevent much harm from this part of the law; or, at least, if it could not be directly evaded, that it would be indirectly met by a virtual consolidation of rival systems which had hitherto been content with pooling contracts.

In spite of the able opposition of Senator Platt, the Interstate Commerce Act, as passed, contained the prohibition of pooling. The result falsified everybody's predictions. The laws against discriminations did not render pooling unnecessary; the railroads did not evade the clause prohibiting pooling, however necessary it seemed to do so. All the ability of the Interstate Commerce Commission could not save us from a period of chaos, which is by no means wholly ended.

At first, it seemed as though the optimists were right, and rate-cutting were about to cease. The effectiveness of the law during the early months of its operation was greater than almost any one had dared to predict. This was due partly to the wisdom of the decisions of the Interstate Commerce Commission, partly to a real desire on the part of many railroad men to put a stop to the old system of special rates. But this temporary success only threw the subsequent failure into bolder relief. When the law had been in operation a year and a half, matters were worse than they were before the act was passed, and nearly as bad as they ever had been in the worst periods of our railroad history. Some people went so far as to say that they were worse than they ever had been; but this view, though countenanced by so high an authority as Mr. Charles Francis Adams, and partly accepted by the Interstate Commerce Commissioners, is not fully justified. Things had simply reverted, after the prohibition of pools, to what had been their normal and customary state before pools were invented. That which in 1876 seemed natural to railroad men, because

we had never had anything better, seemed monstrous in 1888.

The worst of it was that the bad roads were able to set the standard to which all roads must conform. The commission could not protect the law-abiding roads from evil. Its charges of wanton recklessness against managers who met cut rates were not always well founded. The last report of Mr. Jeffery, General Manager of the Illinois Central, a road which had followed a more conservative policy than most others, shows the impossibility of pursuing the inactive policy which the commission would have recommended. The policy was, in fact, tried; and "after a fair trial," says Mr. Jeffery, "the lines interested became dissatisfied and restive. They felt that their losses were too great in giving up the through traffic." Practically, the only way to prevent the reckless line with little local traffic from getting all the through trade was to show your own willingness to meet a cut rate. There are times when it is better to fight at a loss than to adopt a policy of "peace at any price."

The Interstate Commerce Act did not, in fact, prevent rate-cutting, either open or secret. It simply made it take different forms from what it would otherwise have done. Some of these forms were quite as bad as those which they superseded. It was in vain for the commission to insist that railroads ought to complain of the action of their rivals when they suspected rate-cutting instead of trying to meet the cut. But one road might steal another's whole business before the commission would be likely to interfere.*

* "If a rival road suddenly introduced a sweeping cut, with all the worst abuses, the commission would doubtless interfere; but an ordinary difference of method, which might be sufficient to divert a large part of the traffic, would hardly be recognized by that body as furnishing a case for action. If the commission did anything, the results would be accomplished so slowly that it would be like shutting the stable door after the horse was stolen.

"Under the circumstances, we believe that the only available check upon

It may seem strange that, under all these circumstances, the law against pools was not more frequently evaded. The Interstate Commerce Act, though it prohibited divisions of traffic or earnings, left untouched one form of pool which has been by no means uncommon. It is possible for roads to keep traffic in agreed proportions if each manager will stiffen rates whenever his road runs ahead of a given percentage. The Southern Railway and Steamship Association, the most highly organized of our pools, has acted somewhat in this manner. If a pool had arranged matters in that way before the passage of the act, it was comparatively easy to continue it. But it was not easy to apply the system to new cases. Perhaps there was no adequate motive for so doing. The loss from the absence of a pool fell upon the stockholders: the danger from trying to establish one would fall upon the managers. Under these circumstances, it was hardly to be expected that the managers should try very hard to evade the law.

In January, 1889, some of the strongest financial houses undertook to protect investors' interests in this matter. Messrs. Drexel, Morgan & Co., Brown Brothers & Co., and Kidder, Peabody & Co., brought much pressure to bear upon the railroad presidents in favor of reform. The underlying idea of the movement was good: the way in which it was carried out was in many respects faulty. To begin with, the movers underestimated the practical difficulties with which they had to deal. They thought that, if the railroad presidents sincerely wished to have rates maintained, they could accomplish their object without difficulty. Whether they could accomplish it at all was doubtful. So powerful a man as Bis-

rate-cutting is the knowledge that a cut rate will be met. We dislike to say so, for it is an intolerably bad state of things when such is the case. But it is better to face the facts than to preach peace when there is no peace. If police arrangements are totally inadequate, honest men must carry weapons." *Railroad Gazette*, February 8, 1889.

marck himself had found it impossible to avoid cut rates in his own state roads until he made pooling contracts with all his competitors. It is rather hard to insist that every railroad president should be able to do what Bismarck could not. But there was a good deal of impatience, on the part of those who were interested in forming the Interstate Commerce Railway Association, at the suggestion of any practical difficulties. These practical difficulties, nevertheless, formed the gist of the whole trouble. If pooling could not be applied, some other administrative measure was necessary to accomplish the same results. Suppose one road cuts rates irresponsibly,— perhaps without knowledge or bad faith on the part of its president: how shall this be prevented from giving rise to suspicion of bad faith, and involving many companies in a rate war? In Article 18 of the agreement, the presidents contemplate this contingency as possible, and say: "The Executive Board shall from time to time, on the application in writing of an accredited representative of any company, the president of which is a member of the association, take such steps, after full hearing of all parties in interest, as may be proper, requisite, and legal to secure to each company its due share of the competitive traffic." Nobody knew what this meant. All were anxious not to inquire into it too closely.* The result was that, when Chairman Walker found himself obliged to take action under this article, in October, 1889, he confessed that he had neither the means of ascertaining what was a due share nor the power of enforcing his award.

The articles of agreement by which the Interstate Commerce Railway Association was founded had the same inherent defect as the Interstate Commerce Law itself. They tried to control rates by a declaration of policy, unaccompanied by the administrative means for securing its

* *Proceedings of the Conference of Presidents of Railroad Lines West of Chicago and St. Louis*, p. 76.

enforcement. The intention of the lawgivers and the intention of the railroad presidents were both useless, when an irresponsible set of officials, on a single road, could divert business from better managed roads without being found out and punished. The pooling contract had prevented the diversion of business, and thus removed the motive for making or meeting cut rates. Its absence could be made good only by an overwhelming police power; and this neither the law nor the "gentlemen's agreement" made any pretence of supplying.

But why could not financial unity go farther and take the shape of a railroad trust? Many persons thought that it could. Several detailed suggestions of the sort were made, the most explicit being that of Mr. Charles F. Beach, Jr.* He would have a majority interest in the stock of separate corporations conveyed to the trust and held in the names of sub-committees. The dividends of the different corporations should be declared separately and paid to the stockholders as such, only indirectly accruing to the benefit of the holders of stock certificates. Had this plan been suggested a few years earlier, it might have had some chance of success. But 1889 was a bad year for trusts. The trust is practically an arrangement for securing the advantages of consolidation without the trouble which actual consolidation always involves. It worked very well as long as the public did not know what was going on. But the public is finding out the real state of the case, and the courts have no difficulty in declaring such agreements to be against public policy. If they can do so under the common law in the case of manufacturing concerns, the statute against pools will make the illegality all the clearer in the case of railroads.

Actual consolidation of competing lines would evade the prohibition of pooling. But for the present there are too many rival interests involved for such consolidation to be

*Railway and Corporation Law Journal, July 27, 1889.

completed over the whole extent of territory necessary to its success. As far as the Interstate Commerce Law acts, it favors consolidation; but this has been in the form of closer agreements between connecting lines rather than between competing lines. The process by which this has come about is worthy of careful study. It is not so much, as was predicted by Mr. Adams, from the effects of the short-haul clause as from the new forms of competition developed under the clause against pools.

When a division of traffic was made impossible, it became all the more important for each road to control its own feeders. Such a result might have been accomplished by consolidation at the outset. But in the beginning of 1887 railroads were valued at rather high prices; and it was easier, even though in the long run less profitable, to build new roads than to buy old ones. Thus the Atchison was extended eastward to Chicago; a number of other roads carried their operations westward across the Missouri River. A year's experience was enough to convince the managers of the folly of this railroad duplication, and that particular form of competition was of course abandoned. But other methods continued which, as far as they go, produce almost equally wasteful results. Take a case which comes up to-day. Suppose the Pennsylvania road builds a number of cars, and sends them west to catch shipments of wheat. This wheat begins to move east, to an extent which taxes the capacity of the Pennsylvania to handle, and which is far beyond the immediate power of the market to absorb. The result is that these cars are left on side tracks and used as storehouses. For such use, no charge is made; for the roads have not been able to agree upon any scale of demurrage charges. The side tracks of the roads are filled with such cars, and a virtual rebate is given in the form of free storage. The other trunk lines feel themselves forced to follow the example of the Pennsylvania. The effects are

in some respects worse than those of an ordinary rebate, because they show themselves in bad transportation economy through the year. The traffic is crowded forward at the busiest season beyond the capacity of the markets to absorb it. A large part of the equipment, being made to meet an abnormal demand instead of a normal one, lies idle for most of the year. Since equipment will rust out as well as wear out, loss by depreciation must be added to the loss of interest, and is no inconsiderable obstacle to good economy in the transportation department. The proper thing, from the standpoint of public economy, would be for the roads, and especially the Western roads, to build storehouses; but such storehouses will not be built as long as the traffic department of a connecting line is anxious to furnish free storage for an indefinite length of time in its own cars.

This is one among many sources of loss, due to competition, which can be averted by an agreement of connecting lines instead of competing ones. If a road is sure of the business of a connecting line, it is not only freed from the need of building a costly extension of its own, but it can adopt more economical methods of handling traffic. If two connecting roads adopt a policy of firm alliance, the mutual gain in economy is worth more than any possible attraction which there might be in preserving the position of a free lance. This is the direction in which things seem at present to be tending. While a good traffic contract with a connecting line does not secure all the advantages attendant upon a pool, the absence of such a contract intensifies all the disadvantages coming from the want of pools. We may therefore look for the further development of such contracts, if not for actual consolidations. While most of the reported agreements are mere talk of the street, there is an actual drift towards such union of interests, which furnishes, underneath the many fictions of detail, some basis of fact.

In discussing railroad business under the Interstate Commerce Act a year ago, it was said: * —

> Should the harvests of 1889 prove abundant, and general business at the same time be prosperous, the fall in railroad values might be so far arrested as to give the railroads time for organization before matters reach a crisis. In that case, we may hope for a gradual development of railroad organization in such a manner as to adapt itself to the existing law.

Such is precisely the condition of affairs to-day. We are now seeing the beginning of such adjustments. Another year of similar conditions will probably go far towards adapting our railroad business to the legislative forms imposed by the act,— not by an evasion of the pooling clause, not by the formation of a trust, but by combinations between connecting interests on a scale hitherto unknown.

ARTHUR T. HADLEY.

* *Quarterly Journal of Economics*, January, 1889, p. 186.

THE THEORY OF CAPITAL.·

A FULL description of the present article cannot be conveyed in the few words of a title. The theory of capital here offered is not based on the familiar accounts of economic production found in the text-books, and could not be explained by them. The essay is an analysis of fundamental economic notions and of the process of economic production, leading up to and culminating in a theory of capital.

Its relation to the note on *The Cost of Production of Capital*, published in a former number of this journal,* and to Mr. Bonar's reply,† must be explained. Two years ago, in reviewing Mr. Bonar's *Letters of Ricardo to Malthus*,‡ I said that the gap between the doctrines of Ricardo, Mill, Cairnes, and Sidgwick and those of Jevons, Menger, and Böhm-Bawerk was one not to be filled by describing Ricardo, in the words of Jevons, as "an able but wrong-headed man"; and I added, "For the student who will patiently go over the whole ground of Ricardian economics, comparing it point by point with the economics of the school of Jevons, there is work to do that will not be barren of results." Professor Jevons himself, notwithstanding the slighting way in which he spoke of Ricardo, did not make so complete a break with the older doctrines of English political economy as some of his disciples have imagined. Thus, almost at the beginning of his chapter on Capital, he says: —

> The views which I shall endeavor to establish on this subject are in fundamental agreement with those adopted by Ricardo, but I shall

* Vol. iii. p. 503, July, 1889. † Vol. iv. p. 81, October, 1889.

‡ *Political Science Quarterly*, vol. iii. p. 181, March, 1888.

try to put the Theory of Capital in a more simple and consistent manner than has been the case with some later economists.*

He was careful not to deny the influence of cost of production upon value. In the course of his exposition of the theory of labor, he said: —

> It may tend to give the reader confidence in the preceding theories, when he finds that they lead directly to the well-known law, as stated in the ordinary language of economists, that value is proportional to the cost of production.†

A little farther on he repeats in italics, "Value is proportional to cost of production";‡ and, on the next page, he sums up the whole doctrine in the following italicized proposition: —

> The quantities of commodity given or received in exchange are directly proportional to the degrees of productiveness of labor applied to their production and inversely proportional to the values and prices of those commodities and to their costs of production per unit, as well as to their final degrees of utility.

It has long seemed to me that one of the most promising undertakings for the modern economist would be an investigation in detail, in respect of some of the more important forms of wealth, of the relations of cost to value as thus conceived by Professor Jevons. In the present article, I hope to make a contribution to such a study. The note on *The Cost of Production of Capital* was a brief preliminary statement of one particular point to be considered. Assuming that goods can be classed as capital only when they constitute a surplus in excess of what must be immediately consumed in subsistence,— an assumption which has been made by the whole line of English economists, even when they have used expressions inconsistent with it, and which is fundamental in the

* *Theory of Political Economy*, edition of 1879, pp. 241, 242; edition of 1888, pp. 221, 222.

† *Ibid.*, edition of 1879, pp. 201, 202; edition of 1888, p. 186.

‡ Page 208 or 191.

thought of the Austrian writers,—I undertook to show that capital goods necessarily have a higher cost of production per unit of commodity than has produce constituting immediate subsistence, because they must be produced after subsistence has been won,—that is, during the hours in which labor yields diminishing returns. The fact that in the modern world subsistence and capital are undergoing production simultaneously from morning till night in no wise affects the theoretical validity of this statement. Whether produced simultaneously with subsistence or not, if capital, in addition to subsistence, is produced in fact, the working day is longer than it would be if only subsistence were produced, means and methods of production remaining the same; and the resulting higher cost is properly chargeable to the account of capital, not to that of subsistence.

This relatively high cost of capital goods, it was argued, affects the value of capital by limiting its supply. There was no suggestion that cost influences value in any other way than by "affecting the quantity produced," nor that, apart from supply, "what gives rise to interest is 'the double, double toil and trouble' of converting things future into things present by overtime and abnormal labor." Mr. Bonar's imputation of such opinions to me, I do not quite understand; for I explicitly pointed out the different questions involved in any investigation of the cause of interest, and as explicitly limited my own inquiry to the problem why capital "is in such limited supply that lenders are able to convert their desire for loan interest into an effective demand." The question whether interest is a problem of surplus product or of surplus value was not discussed. I merely indicated that there is a point of view from which a certain sum of wealth, called economic interest, may be thought of as a unique stream of wealth, drawn by means of capital from the bounty of nature. Mr. Bonar thinks that such a view is inconsist-

ent with the several principles of the school to which Professor Böhm-Bawerk belongs. If so, it is one of the foremost writers of that school who has been guilty of the inconsistency.* My sole purpose in alluding to this view, however, was to mark off the problem that it presents from the one with which I was then dealing. This was necessary, because in recent discussions in this journal, particularly in the articles by Professor Patten † and Mr. Sidney Webb,‡ interest had been viewed as a product of capitalistic production; and it was from Mr. Webb that I borrowed the convenient distinction between economic interest and loan interest. In the present article, I shall take up some of the problems not dealt with in the preliminary note. I purpose to examine the phenomena of capital in their relation to the increase of efficient utility, to cost, and to value.

The fundamental question in regard to capital concerns the work that it performs. To adapt President Walker's remark about money, capital is that capital does; and our first business is to know what capital does, how it does it, and to what extent. The present state of economic knowledge on these points seems to me extremely vague and unsatisfactory. It is not enough to say that capital aids labor in the production of wealth. If any reader thinks that it is, let him compare the definition of the capitalistic function given by Professor Jevons with that given by President Walker. "The single and all-important function of capital," says Jevons, "is to enable the laborer to await the result of any long lasting work,—to put an interval between the beginning and the end of an enterprise." § Turn now to President Walker. Care-

* See Dr. Friedrich von Wieser's *Der Natürliche Werth*, pp. 132–139.

† *The Fundamental Idea of Capital*, vol. iii. p. 188, January, 1889.

‡ *The Rate of Interest and the Laws of Distribution*, vol. ii. p. 188, January, 1888.

§ *Theory of Political Economy*, edition of 1879, p. 243; edition of 1888, pp. 222, 223.

fully classifying capital under the three forms, subsistence, tools, and materials, he says: —

> One of the advantages of this classification is that it directs the attention to the part performed by tools, machinery, and apparatus in the production of wealth. Look into many text-books on Political Economy, and you will find capital spoken of as if its main or even its sole office were to furnish subsistence to the laborer. Yet two nations may be equally provided with subsistence, while the superiority of one of them in the possession of tools may give it a prodigious advantage over the other in the power of producing wealth.*

Can there be any doubt that a theory of capitalistic production must account for this "prodigious advantage"? Plainly, either capital performs another function than that attributed to it by Jevons or materials, tools, machinery, are something more or other than capital. The theory of capital is far from complete, so long as such a question remains unsettled. Evidently, we ought to know just what it is that can be done and is done by such unlike things as a store of food, a stock of materials, a stock of inanimate things called tools and machinery, and a stock of such animate things as flocks and herds and oxen and horses, all of which are commonly regarded as concrete forms of capital.

Professor Böhm-Bawerk, elaborate as is his account of the process of capitalistic production, does not impart this knowledge. He does not, like Sax,† deny that economic theory is concerned with it. On the contrary, though affirming that the economist may, if he chooses, refer the problem to the physicist, he is so conscious that the physicist has not dealt with it, and that no theory of capital can be constructed without it, that he devotes several pages to its consideration.‡ Having shown by examples that capitalistic production differs from production by

* *Political Economy*, advanced course, new edition, p. 69.

† *Grundlegung der theoretischen Staatswirthschaft*, p. 316.

‡ *Positive Theorie des Kapitales*, pp. xiv–xxiii, and 16, 17, 18.

unaided human labor in being less direct, the production of intermediate products being interpolated between the beginning of labor and the completion of the final goods, and having shown also that such indirect production is more fruitful than direct production, he asks in so many words the question why it is so;* and his answer is that every intermediate product enlists the co-operation of an auxiliary force (*einer Hilfskraft*) that is stronger or better adapted to the work than the human hand.† If this answer is sound, and I hope to show that it is, it enables us to say that Jevons's definition of the function of capital is extremely inadequate, and it justifies the current classification of tools and machinery, with the stock of food and clothing, as concrete capital or capital goods. It does more. It raises a doubt whether a store of subsistence for laborers is itself capital, however long the interval between the beginning and the end of an enterprise, unless, in some way, in the process of consumption, it enlists the *Hilfskraft*. This doubt, faithfully followed, may lead to interesting conclusions; but, before we can follow it, we must be really sure that the work of capital is in fact what we assume, that it is in fact something more than staying power. The longer one reflects on this matter, the stronger will grow his conviction that the problem calls for further analysis. We must know *how* capital enlists the extra-human energies in production. Is the process mysterious? Böhm-Bawerk does not tell us; and, in failing to tell, he fails, like all economic writers before him, to give a really specific and definite answer to the question, What, exactly, is the function of capital in economic production?

Not more satisfactory is the state of opinion in regard to the value of the capital function. The ablest economists are not yet agreed among themselves whether capital goods undergoing productive consumption reproduce

* "Warum aber ist es so?" at p. 18. † Page 21.

themselves with or without surplus value. Böhm-Bawerk maintains the negative; while, as was noted a moment ago, Dr. Wieser, in his remarkable book on Natural Value, enters into a long argument to prove that capital does, in fact, yield in production a *reiner Ertrag*,—a true surplus value.

Such being the present chaos of the "fundamental propositions respecting capital," I have thought it worth while, before inquiring into the cost and value of capital, to attempt to show exactly what capital does in production, and how. The result is a conviction that we must distinguish between capital goods * and capital proper, a distinction not without a difference, and one which, as will appear in the sequel, is not the same as Professor Clark's distinction between concrete capital and pure capital,† though allied to that and leading naturally to it. I expect to show that capital goods in productive consumption reproduce themselves with surplus product, while capital proper, if wisely invested, is not consumed at all, but, augmenting, creates surplus value. Consequently, the essential function of capital in production is scarcely suggested, much less described, in Jevons's definition.

The nomenclature of utility and value will be that of Professor Jevons and the Austrian economists. The technical meaning given by Jevons to the word "utility" cannot entirely supplant the meaning that it has in common speech. I have found it so necessary to employ the word in the common meaning that, when I wish to speak of utility as affected by supply of commodity or by degree of satisfaction already attained, I shall use the phrase degree of utility, final utility, or subjective value. When I use the word "utility" without qualification, it must be

* Or capital plant, capital plant being a better term to use when the capital goods consist of mills and machinery, docks, wharves, warehouses, dikes, canals, roads, railroads.

† *Capital and its Earnings*, in the Publications of the American Economic Association, vol. iii. No. 2.

understood, according to Roscher's definition, as signifying "a quality of things in themselves, in relation, it is true, to human wants."

Political economy needs to adopt from modern biology and psychology notions of wants and satisfactions more definite than the abstract symbols that have been doing too long the duty of true scientific conceptions. Whether or not Mr. Spencer's definition of life as a continuous adjustment of internal relations to external relations is adequate for all scientific purposes, it is at any rate true as far as it goes; and it is certain that a scientific theory of economic production must rest on the postulate that pleasures and pains are the accompaniments of a continuous interchange of matter and energy, *in combinations of increasing complexity*, between the organism and its environment. All satisfactions depend on incomes of matter and energy from without, or outgoes of matter and energy from within, or upon reactions of external things upon the energies of the organism. Insufficient incomes create the pains of depletion and the desire for supply. Excessive incomes create the pains of satiety and over-stimulation and the desire to cut off supply. Insufficient expenditures from within create the pains of *ennui* and the desire for mental or physical activity. Excessive expenditures from within create the pains of weariness or exhaustion and the desire for rest. These are the generic facts of economic phenomena. From them we must derive our conceptions of utility, value, and cost; and, as everything depends on the accuracy and adequacy of our notion of utility, it is of the first importance to see just how those things that we call useful are related to the evolution of life.

If life is a correspondence of internal facts to external facts, it must be conversely true that whatever ministers to life does so by establishing, in some way, a correspondence of external facts to the internal facts established

hitherto; and, if the degree of life varies with the degree of correspondence, it must be equally true that the degree of ministration of external things varies with the degree of their adaptation to a process and product of organic evolution, which, in man, if we take account of mental evolution, is becoming complex beyond any power of conception. In a word, not only is utility, regarded as an objective fact, the obverse of that correspondence of internal relations to external relations which constitutes life,— being itself a correspondence of external relations to internal relations,— but *the evolution of utility is always a process of co-ordination*, becoming more and more intricate with the evolution of higher types of life and the corresponding multiplication and refinement of wants.

This is the starting point of a scientific theory of economic production. It is only a small proportion of the wants of a highly developed organism that can be satisfied by the direct action or reaction of natural energies in their simple forms or usual combinations. For the satisfaction of the most urgent wants, and many more of the less urgent wants, external matter and energies must be combined in various highly special ways, as they are in the carbo-hydrates and proteids constituting the various kinds of food, or as they are for the production of instrumental music, or for the pleasurable activity of senses and imagination awakened by articles of adornment and objects of art. On the other hand, certain physical or chemical associations may have to be severed.

These associations and dissociations of external forms and forces that are prerequisites in the satisfaction of wants I shall call preliminary co-ordinations; and the fact to be emphasized is that, as wants become more numerous and complex, the series of preliminary co-ordinations is necessarily lengthened. The total preliminary co-ordination effected for any organism must be sufficient to repay all expenditures involved in the continuous

building up and breaking down of tissue; it must make good all the losses of energy that the organism experiences in all its efforts and enjoyments.

How, then, are the preliminary co-ordinations effected? Do they involve any sacrifice on the part of the organism? To answer these questions is to state the first great law of economic production,— the law of profit, namely:

Beyond certain limits, co-ordination involves cost; but, within certain limits, the utility evolved may exceed the cost.

To some extent, the preliminary co-ordinations are effected by external nature, without effort on the part of the organism benefited; but the proportion falls as we pass from the lower to the higher types of life, and from the cruder to the finer wants. Humanity is not provided for, like the amœba, to the extent of having food in solution in immediate contact with its tissues; and the breath of the wind in the murmurous wood of Lowell's lines does not become

> . . . "the music heard once by an ear
> That cannot forget or reclaim it"

apart from the magic of the master's bow. It is the lot of man to invent and to work, to establish new co-ordinations ideally in thought, and then to establish them externally in correspondence to the thought. Energy must be expended and tissue wasted, that tissue and energy may be renewed. It is here that we meet the fact of cost in its generic aspect. Fundamentally, it is a physiological phenomenon; and we find it to be true, as was so ably contended by Professor Cairnes, that cost in the last analysis consists always of sacrifice. For, if, besides the expenditure of human energy that is pleasurable, there must be an expenditure also in creating utility, there is necessarily a sacrifice of pleasurable activity to a corresponding extent.

We must be careful, however, not to confound the physiological expression of cost with the economic expression. Cairnes fell into error when, having resolved all cost into terms of sacrifice, he went on to express sacrifice in terms of fatigue. Fatigue and utility are incommensurate, except through some mean term, as in Jevons's formulas of negative utility. We can never compare utility with cost unless cost itself can be expressed in terms of utility. But this is not merely possible; it is constantly done in all our economic thinking. We do actually measure one sacrifice in terms of another through an intermediate term, which from one point of view is utility, from another point of view is cost, and which is therefore the common denominator required. To give an example: the physiological cost of cutting a cord of wood is the waste of tissue and energy in the work. This loss must be repaired by a consumption of food, and food in relation to the renewal of protoplasm is utility. But the potential energy of the food might be expended in a more enjoyable way than in wood-chopping. It might go into a pleasant excursion or a day's fishing. It might be expended in creating more or less utility than that of the wood,— in finding or making some other kind of goods. From this point of view, the renewal of energy spent in wood-chopping is cost,— a sacrifice measured by the utility or enjoyment that is foregone. So physiological cost acquires an economic measurement in terms of the utility sacrificed to meet it, and the subjective value of this utility is according to the final utility that might be had by consuming the goods or the labor force in question in the best of the other possible ways. Thus, if two hundred pounds of food will keep a man who does no work alive and well for six months, while three hundred pounds must be consumed if he works to the extent of raising two hundred bushels of potatoes, the economic measure of the physiological cost of his labor is one hundred pounds of

food. If the labor equivalent of these one hundred pounds of food expended in the next best way would have produced ninety bushels of corn, the sacrifice of one hundred pounds of food in raising the potatoes is equivalent to the sacrifice of ninety bushels of corn at the end of six months;* and this sacrifice measures the economic cost of the potatoes.

The identity of this view with the Austrian theory of cost will be shown later. Cairnes's doctrine, properly stated, and the Austrian doctrine, which at first glance seems to be radically different, are fundamentally one and the same.

If this account of cost is a true one, it enables us to understand how utility may exceed its cost of production. As the expenditure of energy in labor is undertaken because the organism fails to find in the environment enough products of co-ordinated energy to maintain and develop life, it is evident that the income of energy secured by means of labor must be greater than the expenditure in labor, or life will still be curtailed. There must be utility gained in excess of utility sacrificed in the labor process. That within wide limits such gain is possible is because the outgo in labor is an expenditure only in co-ordinating useful energies which in themselves are the bounty of nature. Invention and labor merely prevent the dissipation of these energies in non-useful ways. They create co-ordinative utility, not dynamic utility.

Within what limits net utility can be secured becomes for mankind the economic problem of supreme importance. Because it has been obtained in the past, and is obtained still, we have material comforts, knowledge, art, and the refinements of civilization. Just what the limits are in any concrete case, experiment only can ascertain. But the economist discovers a general law of the utmost consequence, according to which, in all cases, they are determined,— a law of variation, namely:

* No account is here taken of the value of land in terms of interest or rent.

Beyond certain limits, cost tends to overtake utility, means and methods of co-ordination remaining the same.

This is the law of diminishing returns in its most general form. It holds true of all labor whatsoever. As the intensity of labor increases, the rate of exhaustion increases. A man striking a blow with an axe every second exhausts his strength more than twice as fast as in striking once in two seconds. The rate of expenditure increases, also, if continuous labor is prolonged beyond a certain time. For a number of hours, the rate may be nearly constant; but a point will be reached beyond which it will increase rapidly. The rate of cost is thus a mathematical function of the intensity and prolongation of labor. It follows that those goods produced by more intense labor, or by labor that has been long continued, have a higher rate of cost per unit of quantity than those produced by labor less intense or fresher.

The laborer thus secures net utility, but not in unlimited amounts. He may work for a number of hours, getting back more than he gives out. After that, he may still get back more than he gives out, but in a decreasing proportion. He secures only diminishing returns. Finally, exhaustion overcomes him: labor and return both cease. Because of diminishing returns, and for no other reason, labor must be supplemented by other means of co-ordination.

This is the fundamental postulate of the theory of capital. If the net utility of the hours of full return more than makes good all losses of energy during the entire twenty-four hours, the laborer can easily multiply his satisfactions. If it just makes them good, and no more, he can increase his satisfactions only by prolonging his labor into the hours of diminishing return. Which the fact will be depends upon the degree to which the resources of the environment require labor to make them available. If food requiring no prepara-

tion is easily obtained at the water's edge or from surrounding vegetation, a very little labor will secure abundant net incomes of energy; but supplies of this kind may begin to fail. The fish within reach from the shore, the fruits and wild grain, become poorer and more scarce. Man is met by the law of diminishing returns of the environment. He finds that, to get enough to eat, he must work until tired. All other satisfactions must be obtained in the hours of increasing fatigue. It is evident that now net utility can be further increased only if the non-useful dissipation of energy can be further prevented without increasing the total expenditure of energy in labor. Bare muscular exertion has accomplished all that it can. Some way must be found to make external nature contribute further to the work of co-ordination. Besides dynamic utility, physical and organic forces must be made to create co-ordinative utility.

The agency that accomplishes this is capital, and the process is capitalistic production. Capital creates no energy, but it prevents the useless dissipation of energy. It co-ordinates matter and energy, and thereby creates utility.

The useless dissipations of energy are in two chief ways. Energies of external nature are perpetually running to waste so far as their relations to human satisfaction are concerned. The bodily energies of the human organism itself are wasted by expenditure at wrong times and in wrong places, by awkwardness or imperfection of muscular efforts, and by lack of continuity. Invention and labor are primarily efforts to diminish wastes of the first class. In these efforts, we become conscious of wastes of the second class; and the elementary capital goods are those that enable us to make the most of our own working powers. The first and most important step in capitalistic production is made when the laborer for the first time becomes fully aware that his strength is subject to

ebb and flow, that nature's bounty is distributed periodically in time and irregularly in space, and sets himself to provide a means of adjustment to these conditions. Economists agree in putting a store of food at the head of the capital series. As Mr. Walker very truly says, "An ample year's subsistence forms the most important advance which a people ever make in their progress towards industrial prosperity."* What we must discern in such a store of food, if we would have a rational knowledge of its function as capital, is a means of adjustment to the universal, inexorable laws of rhythm and segregation. It enables the laborer to spare his strength in illness and in storm. It enables the fisherman to put to sea in calm, to stay on shore in tempest. It enables a population to conserve its energies in winter, and at any time to migrate from the less to the more bountiful environment. In brief, its function is to prevent useless dissipations of labor force, by establishing co-ordinations in time and space.

Superficially, the economic function of tools seems to be something different from that of a store of food or a store of materials. Fundamentally, the service rendered by tools and supplies is the same. One and all, they are co-ordinating agencies which economize human energies, and so make possible more numerous and perfect co-ordinations of external energy. It is not an economist, but the biologist Romanes, who has thrown the clearest light on the economic function of tools:—

> From the time that a stone was first used by a monkey to crack a nut, by a bird to break a shell, or even by a spider to balance its web, the necessary connection between the advance of mental discrimination and muscular co-ordination was severed. With the use of tools there was given to Mind the means of progressing independently of further progress in muscular co-ordination. And so marvellously has the highest animal availed itself of such means

* *Political Economy*, p 67.

that now among the civilized races of mankind more than a million per cent. of his adjustive movements are performed by mechanisms of his own construction.*

The elementary forms of capital goods, diminishing the wastes of human strength in production, enable us to create a second and derivative class of productive agencies of enormously greater efficiency. Provided with a store of food, and with tools and materials, a population can have, and also employ, such productive means as seed grain, flocks and herds, beasts of draft and burden, and machinery. Unlike as these things are in physical qualities, they have one common economic function. The grain of wheat in the earth, starting into a new life that draws together potash and silica, carbon and nitrogen, for whole new ears of wheat; flocks and herds converting grass into meat and milk and wool, and multiplying from generation to generation; the factory that converts coal into power and bales of cotton into lace,— all are in their own several ways co-ordinators of natural energies, and, as such, agencies for preventing the useless dissipation of mighty powers pregnant with human well-being.

Here, then, we have one truth of the utmost significance. Capital goods are not inert. An enormous amount of discussion has been carried on without the faintest perception of the dynamics of the capital function. A plough or a loom has been thought of as so much dead matter. Thus, when Professor Böhm-Bawerk argues that capital is not an independent productive agent,— the only independent productive agents being human labor and natural forces,— he says what is perfectly true in one sense; but he seems to miss the all-important fact that capital goods *are* natural forces in certain highly special combinations. They are matter and energy in a particular form, and working in a particular way. In effecting co-ordination, they are consumed, their matter is disinte-

* J. G. Romanes, *Mental Evolution in Animals*, p. 59.

grated, their contained energy is liberated. But, if they are capital goods in fact, they do, in consumption, usefully co-ordinate energy in excess of the energy dissipated in their own consumption.

Therefore, capital goods, capital products, or productive means, by whatever name we prefer to call them, *are matter and energy so co-ordinated that, in the process of disintegration and liberation, they effect other co-ordinations of matter and energy*, to the extent of reproducing themselves with surplus product, thereby creating net utility.

Why not say capital simply? Why distinguish between capital and capital goods? For the same reason that the engineer distinguishes between the steam-engine and its horse-power; for the same reason that the economist distinguishes between coin and money. Two steam-engines exactly alike in pattern and materials will develop different horse-powers. The silver coin of 412½ grains is not the same amount of money now in fact, whatever it may be called in law, that it was ten years ago. In like manner, capital goods exactly alike to outward appearance will have, in consumption, different co-ordinative efficiencies. They will embody capital in different amounts. Nor will the amount of capital they embody be measured by the money spent in producing them. No economist would claim that hoarded money was capital. No more is it capital if spent in building a worthless machine or a useless mill. Capital, then, is co-ordinative power or efficiency in production, and does not necessarily vary in proportion to the amount of capital goods or to their cost. It depends quite as much on the relations of the different kinds of capital goods to one another, and to all the conditions of production. A thousand bushels of wheat in the form of a store of food may have the highest efficiency as capital for a hundred laborers. A second thousand bushels would embody little additional capital, or none at all; but, converted into tools, it would become capital. Again,

after each man was provided with a full assortment of tools, including duplicates for loss or accident, an additional lot of tools would embody no capital whatever; but their cost, converted into machinery, would become capital. So, just as money invested in more spinning frames than available motive power will run, or in more factories than the market demands, or in railroads for which there is no business, is no more capital than if it were sunk in the sea, the frames, the factories, the railroads themselves, are not capital, in any true sense of the word.

Does capital, then, augment in production? Does it produce surplus value as capital goods produce surplus product? That all depends on how capital goods, reproducing themselves in consumption, are reinvested. If reinvested wisely in producing new co-ordinations, capital itself is not consumed at all, but continually increases in quantity. Whether the surplus product of capital goods is also surplus value depends, further, on the multiplication of wants. Professor Böhm-Bawerk and Mr. Bonar lay much stress on the proposition that great product is antagonistic to great value. So it is, if wants remain the same. But, in the presence of great product, wants do not remain the same. They develop a power of indefinite multiplication. In a normal condition of things, therefore, capital will yield surplus value,— the true *reiner Ertrag* of Professor Wieser's analysis.

I hope I have now made the nature of capital and its function in production sufficiently clear. To completely differentiate it from other forms of wealth, however, we must know something about its cost and value. These inquiries may be made from two points of view. We may study the cost and value of capital from the subjective standpoint, inquiring what subjective cost and value capital has to the individual producer who has no dealings in the market; or from the objective, or market, standpoint, in connection with the phenomena of interest. We will take the subjective point of view first.

All concrete forms of capital, or capital goods, can be produced by means of the one concrete form, a store of grain. Grain will keep an indefinite time, so answering to the first form of capital as a co-ordinator of human labor with external energies in time and space. It will support the laborer while he makes tools or machinery. It can be used as seed. It can be fed to domestic animals. It is convertible into any or all of the other capital forms. As Jevons said, it is the typical free form of capital; for plainly, when he said food, he had grain chiefly in mind.

Therefore, in considering the worth and cost of capital, we may simplify our problem by comparing the cost and worth of grain used as capital with the cost and worth of grain used as subsistence.

The first thing to be noted is that grain as capital, as distinguished from mere subsistence, must be a surplus. None can be set aside for the purpose of increasing production until the more imperative of present wants are satisfied. It must, therefore, be produced after present subsistence is produced. By this it is not meant that the particular bushels of grain destined to become capital must be produced after the particular bushels destined for immediate consumption, nor that the capital grain must be produced in some subsequent month or year, but that, if men are to have capital for to-morrow in addition to the food of to-day, they must keep on working to-day longer than would be necessary to produce to-day's subsistence only. When, however, men begin systematically to produce capital, it is because they have begun to experience diminishing returns from their work of obtaining supplies for present consumption. No man would lay by a store for bad days if, in his worst days, he could gather manna without appreciable effort; nor would he trouble himself about tools or machinery if he could indefinitely multiply the rapidity of his muscular movements, or if he could indefinitely prolong them without increasing the

rate of physiological cost. When capital is systematically produced, it is because without it a population, though putting forth its best efforts, would be ever on the brink of starvation, and because, when capital enables a more abundant subsistence to be obtained, population immediately increases so in numbers that it is still necessary to work a full long day to get enough to eat. Consequently, as capital is produced only by work prolonged beyond the hours necessary for subsistence earning, it is necessarily produced in the hours of diminishing return. We arrive, therefore, at the principle that the cost of production of capital goods is higher per unit of commodity than that of goods constituting present subsistence.

Does it not follow from this conclusion that the product of an hour of overtime labor is worth less to its producer than the product of an hour of less weary labor, and that we have here the contradiction that a kind of goods which reproduce themselves with surplus product, and enormously increase human satisfactions, are worth less to their possessor than goods which have no such self-multiplying power?

Some such thought as this must have been in Mr. Bonar's mind when he pronounced this view of the cost of capital, as it was presented in my preliminary note, inconsistent with the theory which makes the value of an article "more than the total of the wages that have been paid in the making of it." The contradiction, evident as it seems to be, does not exist in fact. The product of overtime labor not only costs more, it may be worth more, than the product of an equal time of fresh labor. For not all portions of food have the same degree of utility. While the first consumed portions have an immeasurable utility, the next a far less, and others yet less, the portions last consumed may have so little utility that the merest trifle would influence the consumer to forego them. Now, in accordance with the law of rhythm above referred to,

the abundance gathered in one day will be greater than in another. A certain portion will therefore have a greater degree of utility if added to the supply of the lean day than if added to the day of plenty. If, then, we suppose the product of the eleventh hour of continuous application to be 5 P, and that of the twelfth hour to be only 4 P, it may yet happen that, while one P costs a fifth more produced in the twelfth hour than one P produced in the eleventh, it may have in consumption on a future day a greater degree of utility than the final P consumed to-day. Much more may its degree of utility as capital be greater than its degree of utility as subsistence if by consumption on a future day it prevents a non-useful dissipation of the laborer's energy by permitting him to give up work that would so far exhaust as to cause illness, or, still more, if consumed as seed, or, in enabling the laborer to make tools, its owner secures on a future day with an equal amount of labor a large multiple of P.

But here we meet the question, How compare a future degree of utility with a present? Can we say that a handful of grain is worth more to a man as capital than as a small addition to to-day's food, when the greater utility of its consumption as capital can be realized only in the future, while its utility as food would be realized to-day? Obviously not, unless it appears that we estimate future utility and present utility equally, or that the future utility as estimated to-day is greater, in spite of different standards of estimation, than the present estimate of the utility of to-day.

That we often value future goods less than present goods of the same kind and quantity is certain. Jevons quotes approvingly the dictum of Bentham, that one of the main elements in estimating the force of a pleasure or pain is its propinquity or remoteness.* That is, we under-

* *The Theory of Political Economy*, edition of 1879, p. 36; edition of 1888, p. 33.

estimate the pains and pleasures of the future, and "the intensity of present anticipated feeling must, to use a mathematical expression, be some function of the future actual feeling and of the intervening time, and it must increase as we approach the moment of realization."* It follows that the truth about the subjective value of a quantity of grain considered as capital, as compared with its subjective value considered as present food, is this: if the actual utility of the future use as capital were to be no greater than the utility of present use as food, its present subjective value as capital would be less than its present subjective value as food. But, as its actual utility as capital in the future will be greater, in fact, than its present utility as food could be, its present subjective value as capital may be as great or greater than its present subjective value as food. And, unless it is greater, the possessor will not set it aside as capital. Consequently, when men systematically produce capital, not for the loan market, but for their own productive undertakings, the actual utility in the future of a given quantity of wealth used as capital must be so much greater than its actual utility in the present could be, if it were used in present satisfaction, that its present subjective value considered as capital is greater than its present subjective value considered as an addition to the subsistence or luxuries of the hour.

Capital goods, therefore, are differentiated in point of cost and value from necessary subsistence and from luxuries in two ways. They are distinguished from necessary subsistence in being a surplus — a quantity of goods not indispensable for immediate consumption — and in having a higher cost of production per unit of quantity. They are distinguished from that other form of surplus, which is devoted to increasing the pleasure experienced in consumption,— that is, from luxuries,— in having a higher cost of production per unit of quantity, in having

* *The Theory of Political Economy*, edition of 1879, p. 37; edition of 1888, p. 34.

a greater utility per unit in the future than luxuries have per unit in the present, and in having, for their possessor, a higher subjective value.

The last-named characteristic of capital goods we shall find to be of prime importance to the theory of their objective, or market, value, which we have now to examine. Measured in terms of interest, the objective value of capital must be explained in a theory of interest. Proximately, interest is neither a phenomenon of distribution nor of production, but of exchange. "Putting money out at interest," wrote Jeremy Bentham, "is exchanging present money for future"; * and interest, in general, is the exchange of a larger quantity of future goods for a given quantity of present goods, or, to follow the phraseology of Professor Böhm-Bawerk, it is the "higher objective value in exchange and higher price for present goods." † The psychological law that men discount the future has been vaguely associated from very early times with the existence of interest; and Bentham, as long ago as 1787, adduced it in reply to the arguments of his day against usury. "*Those who have the resolution to sacrifice the present to the future*," he wrote (the italics are his own), "*are natural objects of envy to those who have sacrificed the future to the present.* The children who have eaten their cake are the natural enemies of the children who have theirs." ‡ It was left for Professor Böhm-Bawerk, however, to fully develop the implications of this interesting truth. Starting from the premise, "Gegenwärtige Güter sind in der Regel mehr werth als künftige Güter gleicher Art und Zahl," § he says, "This proposition is the core of the theory of interest that I have to present"; and, further, "The natural difference in value between present and future goods . . . is the source from which all interest on capital arises." †

* *Letters on Usury*, Letter II.
† *Positive Theorie des Kapitales*, p. 299.
‡ *Letters on Usury*, Letter VII.
§ *Positive Theorie des Kapitales*, p. 248.

To see how it arises, we must go back of interest as a phenomenon of exchange to interest as a phenomenon of distribution. It is from this point of view that Böhm-Bawerk regards it. If a large part of the product of industry consists of capital goods, many producers must take a part of their pay for the work they have done, not in wines and cigars, not in travel or elegant leisure or the enjoyment of art, but in the ownership of cattle and tools and barns, machinery and mills, railroads and steamships, great warehouses and vast stores of goods. The enjoyments equivalent in value to all these things must be postponed by somebody. Not everybody will consent to postponement. Future enjoyments are discounted. The great majority of men prefer to make sure of the pleasures of to-day, letting those of to-morrow take care of themselves. If, then, there are not enough pleasures of to-day to liquidate all claims, if a part of the productive community must take a portion of its pay in futures, that part, the capitalist class, will insist on the addition to its share of a sum equal to the difference between the present and the future worth of future goods. In other words, it will demand interest, and, because of the importunity of other people for immediately consumable goods, will be able to get it.

As a proximate explanation of interest, this seems to me to be sound and adequate. In setting it forth with rare clearness and accuracy, and in developing in careful detail its varied implications, Professor Böhm-Bawerk has rendered a great and lasting service to economic science. But I cannot think it a final explanation. It does not go to the bottom of things. The moment we accept it as true, other questions force themselves upon us, and compel us to extend our inquiry beyond the problems of distribution into those of production.

We therefore ask the question how it happens that there exist such things as railroads and steamships, and mills, machinery, and tools, in the ownership of which the men who are willing to postpone their enjoyments, in whole or in part, can take pay for work done in the present and the past. Plainly enough it is on their actual existence that Böhm-Bawerk's theory of interest rests. Drop them out of the totality of economic possessions, capital and interest both disappear. Now, the men who own these means of production do not cease to subsist. They eat and drink: they live in houses and wear clothes. They have not postponed the present consumption of any necessary thing. They own their productive goods *in addition* to goods for immediate consumption. How, then, and why is this addition created? Goods for future consumption can have equivalents in the present, in the shape of productive goods, only by the performance, in the present and the past, of labor in addition to the labor necessary to produce past and present subsistence. That additional labor, more irksome, less productive per hour than fresh labor, will not be undertaken without a motive; and the only known motive lies in the economic fact that productive goods in consumption reproduce themselves with surplus product, thereby hour by hour augmenting capital with surplus value.

Yet this motive, if we admit its existence, is in direct antagonism to the discounting of future goods when they are represented in the present by capital. It compensates, or neutralizes, the discounting. I can see no possible escape from this conclusion. Without interest as a phenomenon of production, we should have no capital at all, and therefore no interest as a phenomenon of distribution. But, with interest as a phenomenon of production, how can it be maintained that the value of means of production, or capital goods, lags steadily behind the value of final products or consumable goods,

unless there is somewhere in the problem another factor yet to be taken account of? If men get enough out of capital to make it worth their while to produce it in addition to subsistence, why should capital goods exchange at a disadvantage with present consumable goods, unless the utility of capita in production in some way gets cancelled, in whole or in part, by a cost of production?

Nor is this all. The men who own mill shares and railroad stocks are not conspicuous by their abstinence from all present enjoyment. In addition to food and drink, they and their families consume a very fair share of the luxuries of the moment. Instead of postponing their pleasures for the sake of having capital, they have chosen the alternative course of prolonging their labor, or getting other men to prolong labor, into the hours of diminishing return. To the full extent that they have done this, they have converted future goods into present goods. This means that they have measured their discount of future goods in terms of the additional cost of making them present. In other words, this additional cost has become the normal measure of the difference between the future value and the present worth of future goods.

Here, then, seems to be a strange contradiction. Starting from one point of view, we seem to account for interest by a difference of value between present and future goods. Starting from another point of view, we seem to account for it by the extra cost of overtime labor. What is the explanation?

A concrete example will serve best to disclose it. Suppose that two men, A and B, work a rented farm together. They begin with nothing, their tools also being rented. At the end of four years and six months, they decide to dissolve partnership and divide their gains. It is found that they have worked 36,300 hours: A, 19,800; B, 16,500. They have on hand a quantity of potatoes, corn, and pork, and a barrel of cider, a horse and cart, a harness, and

tools. They have kept account of the hours of labor spent in obtaining each article of their possessions, and in the division they reckon the value of each item in terms of its labor cost. A's family is small; and he needs, therefore, but a small proportion of the potatoes, corn, and pork for subsistence through the winter. B has a large family, and must take for his share the greater part of these immediately consumable things. It is then found that for the extra produce going to B, and for the extra 3,600 hours that A has worked, reckoning all products in labor time, and all labor hours alike, A must take the horse, cart, harness, and tools. The cider remains to be disposed of. A says: "I must have the cider. You are taking all of your share in things that you can get the use of at once. I can derive no benefit from my share until next summer. The value of means of production lags behind the value of consumable goods. I will take the cider for interest."

What would B reply? Would he not say: "You are taking an unfair advantage of my necessities. It is true that I have the advantage of you now, but you will have the advantage of me next year. Your share is in a form that will enable you, next summer, to create a much larger product than I shall be able to obtain. If the cider were out of consideration, you would not exchange your share, as it stands now, for mine, without something to boot. You would say that you had no use for more than one hog or more than ten bushels of potatoes. If you had more, the meat would spoil, and the potatoes would rot before you could use them. Future goods are worth as much more to you than present goods as present goods are worth more to me than future goods. Take the cider, if you must; but I shall always feel that I have been unfairly treated."

Now, as for the ethics of the argument, every reader of this *Journal* knows that it would have been held unim-

peachable by the ablest divines of Christendom for a thousand years. Saint Augustine and Chrysostom would have indorsed it. The Council of Nicæa would have sanctioned it, and Aquinas would have elaborated it to weariness. Nay, the arch-utilitarian, Bentham, would have been self-convicted by it; for he uses it himself, in a passage that I shall quote presently, in his reply to the Aristotelian argument on the barrenness of money. But it is not a question of ethics that we are now discussing. The point here to be noted is that economically the argument of B is sound. Economically, it is a fact that the present discount of future goods is offset by the surplus value created by capital goods; and, as has been shown, if this were not so, capital goods would never be produced at all. No man with a particle of enlightenment in his self-interest would create capital goods instead of present consumable goods, or even take the trouble to borrow capital goods if he could get them without interest, if they were not actually worth as much to him in subjective value as present enjoyments. If, then, the discount of future goods is offset by the reproductive increment of capital, interest, as a phenomenon of distribution, has still to be accounted for.

Suppose, then, that in rejoinder A could say: "The gain that I shall get next year by ownership of these capital goods has been offset already. Our products, all told, are the result of 86,800 hours of labor. You have worked ten hours a day, and I thirteen. That we have over and above our food supplies a large part of our capital goods is the result simply and solely of my having worked an extra three hours a day when tired, while you smoked your pipe or slept. I am not willing to put in those hours at the same valuation as the others. I am willing to let their extra cost to me offset the benefit that I shall get next summer from the ownership of capital; and I then have still the claim of interest against you for tak-

ing my share of our possessions in a form not available for present use."

We have here the whole case in brief. There is a distinct element of advantage in the possession of capital goods that is not found in the possession of present consumable goods. If, on the whole, there is such a disadvantage in taking future goods instead of present that interest must be paid, we must find some other element of disadvantage, in the production or ownership of capital, besides the postponement of enjoyment, if we are to account for the remarkable fact that, notwithstanding their productiveness, capital goods exchange at a discount in the market.

Perhaps the reader will feel the force of this consideration more fully if he is reminded that the classical theories of interest have found its efficient cause in the demand for capital on account of its productiveness rather than in the discounting of futurity. Bentham, in spite of his epigram on the children who have eaten their cake, chose this ground when, in the passage to which I referred a moment ago, he undertook to refute Aristotle's remark that all money is in its nature barren. The passage reads: —

> A consideration that did not happen to present itself to that great philosopher, but which, had it happened to present itself, might not have been altogether unworthy of his notice, is that though a daric would not beget another daric any more than it would a ram or an ewe, yet, for a daric which a man borrowed, he might get a ram and a couple of ewes, and that the ewes, were the ram left with them a certain time, would probably not be barren; that then, at the end of the year, he would find himself master of his three sheep, together with two, if not three, lambs; and that, if he sold his sheep again to pay back his daric, and gave one of his lambs for the use of it in the mean time, he would be two lambs, or at least one lamb, richer than if he had made no such bargain.

Manifestly, it would have been difficult for Bentham, after writing this, to argue that the value of a live sheep

lags behind the value of a dead one dressed for the turn-spit, unless he could show that the sheep-owner is necessarily so poor that he must choose between a live one and a dead one, there being no way in which he can have both, or that, having both, the cost of a live one in addition to a dead one is great enough to cancel, partly or wholly, the prospective value of lambs.

Professor Böhm-Bawerk's pages are full of admissions that to the capitalist class future goods are worth more than present goods; and Mr. Bonar, in his exposition of the Positive Theory of Capital, drops such remarks as these: —

> To a large body of men whom we call capitalists, present goods and future are, on the whole, of about equal (subjective) value: they have more than enough for present wants. If he [the capitalist] has any preference, it is rather for future goods than for present, whereas to the workmen the present goods mean their livelihood.*

The replies to the inferences that should be drawn from such admissions would be, I suppose: first, that even to the capitalist present means of production are worth more than future, because, the sooner productive agencies are set at work, the greater will be the revenue from them; and, secondly, that the children who eat their cake to-day are, after all, the great majority of mankind. Neither of these replies will do. The first shifts the ground, accounting for interest by the productiveness of capital. The second confounds the number of buyers in a market with the aggregate of their demand. The capitalist's demand for future goods is far larger than the improvident man's demand for present goods. The manufacturer may demand $100,000 worth of capital products, while his employee demands ten dollars' worth of produce for subsistence. Taking the production and consumption, present and future, of society as a whole, the demand for present consumables and for capital goods

* *Quarterly Journal of Economics*, April, 1889, vol. iii. pp. 340, 344.

must, by Professor Böhm-Bawerk's own showing, nearly or quite balance, since it is one of his cardinal doctrines that the value of means of production is fixed by the value of final products. Increase the demand for wheat, and you increase the demand for ploughs and reapers, for steel rails, freight cars, and elevators. Now, the value of these means of production may, as Böhm-Bawerk affirms, lag behind the value of wheat, the final product, by so much as men discount the future, provided one other condition is not present to complicate matters. That other condition which must be reckoned with is the possibility, nay, the certainty, that, if means of production can be set going to-day that will result at the end of a year in a greatly increased yield of wheat, the new supplies, raising the marriage-rate and lowering the death-rate, raising the standard of living for whole classes and stimulating a thousand demands in the arts, will react powerfully on the value of all capital goods. In a highly organized and growing society, where men make plans far into the future, the value of capital goods is determined not solely by the present demand for consumables, but quite as much by estimates of future demand. There is therefore no reason whatever for concluding that, in such a growing society, capital goods must exchange with consumable goods at a discount, unless it appears that anticipated gains from capital are partly or wholly cancelled by the immediate cost of producing capital goods.

To sum up our conclusions at this point: We can account for interest as a phenomenon of distribution by the difference in value between present and future goods, provided the gains of capital, which would make future goods the more valuable, are offset by a cost of production, and not otherwise. We can account for interest by the limitation of the supply of capital goods through their cost of production, provided we can offset the gains of capital by the discounting of futurity, and not otherwise.

In either case, the normal measure of the discount of futurity is the extra cost of converting things future into things present.

Is not such a doctrine at direct variance with the theory which makes cost the effect rather than the cause of value? This question must be answered by explaining that the Austrian doctrine of cost, so expressed, is equivocal and misleading. What the Austrian writers really mean, and what they ought always to say, is that the value of any means of production is governed by the value of that resulting product which has the lowest final utility or subjective value; that this value is cost in reference to all other products made from or by the same productive means; and that this cost, determining the supply of the other products, determines their final utility, and thereby their value. "In fact, to our surprise we find that in the case of replaceable alternatives it is (in all instances but one) the cost that determines the degree of value after all; and the common identification of cost and price is therefore (in their case only) perfectly justified." *

But "their case only" is practically the case of the great mass of freely produced commodities. The truth is that the Austrian writers have not been able, more than was Jevons, to get away from the fact that cost is the intermediate term between value and value, as the acorn is the intermediate term between oak and oak. Their doctrine of cost, as I said before, in the last analysis is identical with that of Cairnes. Cost is utility sacrificed for the sake of a greater utility. The utility sacrificed is the utility obtainable by spending our labor or consuming our goods in the best of other ways, and our estimate of that way is revealed by the lowest use to which we put either labor or goods. If a laboring population will maintain its numbers and perform its tasks for a bare subsistence, that

* James Bonar, *The Austrian Economists and their View of Value*, *Quarterly Journal of Economics*, October, 1888.

is its estimate of the utility of its labor,— the subjective value of it,— and is the measure of cost of production in the industry of that community. If it demands, also, some of the comforts of life, the measure of cost is changed. Thus, starting from either the Ricardian or the Austrian standpoint, we arrive at the same conclusion. The lowest use to which we devote labor or goods is our measure of cost; and cost, governing supply, governs the value of other commodities freely produced.

We need have no hesitation, therefore, in explaining the value of capital by its cost of production, while still identifying value with final degree of utility. The market value of capital is governed by the marginal productiveness of capital goods. That marginal productiveness, in any given state of invention and the arts, is governed by the supply of capital goods. The supply of capital goods is governed by their cost of production, and their cost of production is determined by the diminishing returns of intensified or protracted labor. In a new or undeveloped community, the rate of interest is high, because the marginal productiveness of capital goods is not kept down by supply, supply being limited because, without the machinery, skilled labor, and means of transportation of older countries, the cost of production is high. In a highly developed community, the rate is low, because marginal productiveness is kept down by supply, since, with the large accumulations of capital already existing, additional capital goods can be produced without so great intensification or prolongation of labor.

One more question remains to be answered; and, after what has been said, the answer may be very brief. If the supply of capital is governed by the cost of its production, and if the cost of production is resolved into the excessive cost of overtime labor; but, if capital, once produced, yields surplus product: why may not interest fall to zero through the possibility of producing, by means of

capital, all necessary subsistence, all desirable luxuries, and abundant renewals of capital goods in a short working day, without over-exertion? The reply is that interest is maintained by the same conditions that lead to the invention and use of capital in the first instance; namely, diminishing returns, multiplying wants, and the pressure of population on the means o subsistence. So long as these conditions of industrial life continue, the majority of mankind will be held inexorably to a working day of a length and intensity that reach or pass the point of diminishing productiveness. Two of the conditions are permanent. The law of diminishing returns is no more subject to human will than the law of gravitation. The multiplication of wants is inseparable from the mental progress to which all new co-ordinations of natural energies and all the resulting increase of wealth are due. The rate of increase of population is the one factor that diminishes as mental power increases. The one way of relief is to multiply mental power at the expense of the population rate. That alone will enable a community to create its capital without over-exertion or protracted working hours. The conclusion of the whole matter, though reached in another way, is identical with that of the orthodox English economy. The decline in the rate of interest in a growing, prosperous community measures the growth of the power of productive co-ordination in proportion to the growth of population.

In conclusion, it may be well to indicate three or four points in which the theory of capital here set forth agrees with or differs from certain other theories besides that of Professor Böhm-Bawerk. It agrees with that of Adam Smith in holding that all capital is stock, but that not all stock is capital, therein differing from the theory of Jevons. It differs, further, from Jevons's theory in that it does not find in capital something that allows us to expend labor in advance, but something that rewards us

for so doing. It *obliges* us to expend labor in advance, but enables us to work in another and more advantageous way; and, what is of vastly more importance, it enables us to make natural forces work for us in another and immeasurably more advantageous way.

The present theory is accordingly in essential agreement with the view of Professor Patten, as stated in this Journal a year ago. Most certainly the fundamental fact in the function of capital is that of working in another way. But it is more than the fact of human labor working in another way: it is nature working in another way. This is not, however, the fundamental fact in the production of capital. The underlying facts there are invention, or the establishing of new co-ordinations ideally, and overtime labor, by which these ideal co-ordinations are converted into objective fact.

Finally, the present theory is in fundamental agreement with the deepest truth attained by one of the clearest and profoundest economic thinkers of any time or nation,— I mean the law of normal value as stated by Professor Cairnes.

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NOTES AND MEMORANDA.

MESSRS. GUILLAUMIN have announced the publication of a *Nouveau Dictionnaire d'Economie Politique*, under the editorship of Messrs. Léon Say and Joseph Chailley. The Dictionary is to be in no sense a new edition of the well-known work which Coquelin and Guillaumin published under the same title a generation ago: it will be an entirely new book. "Its doctrines are those of the grand tradition in economics, which has passed from Turgot and Adam Smith, through J. B. Say, John Stuart Mill, and Bastiat, to our own times"; but it is characteristic of the present drift that special attention is promised for the social questions. The first part was published in November, at three francs. There will be sixteen to eighteen *fascicules*, forming two large octavo volumes.

We note also that Messrs. Alcan have begun the publication, under the editorship of the Comte de Maillard de Marafy, of a *Grand Dictionnaire International de la Propriété Industrielle*, devoted chiefly to trade-marks, patents, copyrights, and similar subjects. The laws of different countries and treaties between them will be printed in full, and the compilation will be of use to lawyers and men of affairs quite as much as to economists. There will be between two hundred and two hundred and thirty parts, at a franc apiece; but early subscribers are to be charged no more than 200 francs for the whole. The first nine parts have appeared.

THE International Conference on legislation for the protection of workmen, which, as was noted in the last issue of this *Journal*, was to have held at Berne in September last, has been postponed for the present, because of the failure of several governments to take part. It is now announced for the

spring of this year. Great Britain had agreed to send a representative, but only on condition that he should enter into no discussion of an eight-hour law.

THE Twenty-second Annual Congress of the Trades-unions of Great Britain was held at Dundee in the first week of September last. The Congress was looked forward to with curiosity, and in some quarters perhaps with a little apprehension, especially in regard to the attitude it would take on the eight-hour question. At the Congress of 1888, it will be remembered,* an attempt was made to ascertain what was the feeling of the trades-unionists on an attempt, with or without legislative aid, to reduce the working day to eight hours. The inquiry was so loosely conducted that its results were rejected, and another ordered in its place. The results of this second inquiry were laid before the Dundee Congress; and though, as is inevitable in private investigations of this sort, they are far from conclusive, they indicate, in connection with other doings of the Congress, what is the general drift of opinion among the members of the English labor organizations.

The Parliamentary Committee, by which the inquiry was conducted, reported that their circulars had brought out answers from 33 organizations, with a membership, in round numbers, of 178,000, and that votes had been received for 107,000 of these members. The total number of organizations represented at the Congress was 170, and their membership was said to be 885,000; so that it appeared again, as it had in 1888, that only a small proportion of the unionists had taken the trouble to answer the questions. But the looseness of the organization of not a few of the enrolled unions, and the usual insufficiency of inquiries conducted by circulars, probably go far to neutralize this fact as evidence of lack of interest in the question; and, at all events, the number of answers received was much greater than in 1888. The result, so far as it went, was clear enough. Of the 107,000 who voted, a large majority, over 67,000, answered the question, "Are you in favor of

* See this *Journal*, vol. iii. p. 207.

eight hours?" with "No"; some 40,000 answered, "Yes." A second question, asked of those only who had answered yes on the first, was, "Are you in favor of its [eight hours] being obtained by Act of Parliament?" and on this about 28,000 answered, "Yes"; 12,000, "No." But the discussion of these figures showed that only their general drift could be accepted. One large union had voted *en bloc*, the representative council having taken the vote without consulting the members; in another case, a vote of 10,000 in favor of an eight-hour day was recorded, though the same union reported its membership to the Congress as no more than 1,000. The Congress finally voted to reject the whole of the statistics.

The same question, however, came up later in another connection. At the International Workmen's Congress held in Paris during the summer, a resolution had been passed, among others, in favor of legislation by which the maximum working day for all trades was to be eight hours. This resolution was brought separately before the Dundee Congress, and came to a vote after a sharp debate: it was rejected, 88 to 63. The indications, therefore, are that the English workmen, on the whole, are still conservative on this phase of the labor question. So long as that is the case, schemes for eight-hour legislation — such as, for example, the elaborate bill which Mr. Sidney Webb presents on behalf of the Fabian Society in the December issue of the *Contemporary Review* — cannot be expected to have any practical effect.

THE American Federation of Labor held its Fourth Annual Convention in Boston in December. The Federation is said to represent seven hundred and fifty thousand members,— figures which have the uncertainty usual with such statements in regard to American labor organizations. But it is clear that the Federation, which, like the Trades-union Congress of Great Britain, is no more than a loose alliance of trades-unions, has gained ground rapidly since it was formed in 1886. It has grown with the decay of the Knights of Labor, and has fairly superseded that organization, as representing a great mass of more or less firmly organized workmen. There seems

to be no indication of any truce in its struggle with the Knights. The Federation offered to urge its members to join mixed assemblies of the Knights, provided that the latter would give up their Trade Assemblies, which are practically trades-unions within their body. But this offer the Knights rejected; and the two bodies continue to stand apart, with not a little bitterness of feeling on both sides.

On the eight-hour question the Federation reached a conclusion, or rather failed to reach one, in a fashion not unlike the proceedings of their companions in Great Britain. The report of the committee on the eight-hour movement came from the well-known hand of Mr. George McNeil, and was accepted unanimously. While it argued that "a reduction of time to eight hours per day would result in increased wages and increased production," it nevertheless stated that "existing conditions will not in our judgment justify the hope that at this time all the crafts are prepared to successfully enforce the eight-hour system on the 1st of May, 1890." The recommendation was made to the executive council to select the trades which might be prepared to fight successfully for an eight-hour day; and each union in the Federation was requested to assess its members ten cents per week, beginning not later than March 1, 1890, by way of providing funds for this struggle.

Mr. Charles Booth's investigation of the conditions of East London, in the volume on the *Life and Labour of the People*, has led Mr. Frederick Scott to make an inquiry of the same sort on some of the poor districts of Manchester and Salford. The results are published in the *Transactions of the Manchester Statistical Society* for 1888–89. Mr. Scott selected two districts, one in Manchester and one in Salford, supposed to be representative of those in which the poor live. Information in regard to them was collected by the visitors, all women, of the Ladies' Branch of the Manchester and Salford Sanitary Association, and was supplemented and checked by another set of returns collected for the greater part of the same districts by sanitary visitors of the Association. Mr. Scott classified the population as (1) very poor, having an income of less than four shillings per adult per week; (2)

poor, having up to six shillings threepence; (3) comfortable, up to eight shillings. Two children were reckoned to be equivalent to one adult. At the same time, the population was divided, according to occupation, into nine classes, which are stated in the table which follows.

In the Manchester district, the inquiry embraced 2,515 heads of families and 10,569 persons. The number of persons whose occupations were stated separately was 2,528. In the Salford district, the inquiry embraced 8,702 persons and 1,887 householders; the number of persons whose occupations were stated was 1,912. The inquiry led to the following statement of the composition of these two groups and of the situation of their members. It will be noticed that the table, which is condensed from Mr. Scott's, gives simply the percentage of very poor, poor, and comfortable, under each class and for the whole district.

	Manchester.					Salford.				
	Number.	Per cent. of				Number.	Per cent. of			
		Very Poor.	Poor.	Comfortable.	Not Stated.		Very Poor.	Poor.	Comfortable.	Not Stated.
A. Unemployed	59					33				
B. Unskilled Labor	1,055	45	19	12	24	842	68	14	4	15
C. " " Superior	41	29	7	20	44	52	38	12	10	40
D. Artisans	610	24	16	19	40	530	32	12	14	42
E. Shopmen, Warehousemen	104	16	13	21	49	74	28	15	7	50
F. Cotton Operatives	121	39	19	24	18	71	38	18	11	33
G. Manufacturers, Small Dealers, Shop-keepers	167	4	1	66	29	122	2		84	13
H. Street Vendors, Hawkers	142	17	.7	1	81	45	24	7	2	66
I. Miscellaneous	229	26	7	6	61	153	34	7	9	50
Total	2,528	31	14	17	38	1,912	46	11	13	30

As might be expected, the figures show that the unskilled laborers form by far the largest class in both districts, and that among them, again, the proportion of the very poor is decidedly the highest. The artisans form the next largest class, and furnish so high a proportion of very poor — 24 per cent. in Manchester, 32 per cent. in Salford — that they may be fairly inferred to be of a grade not much above their unskilled neighbors.

SOCIAL ECONOMY AT THE PARIS EXPOSITION.

Two aspects of the great French Exposition deserve the special attention of students of economic and social science: first, the groups of economic sections located in the Esplanade des Invalides, and known as the Exposition of Social Economy, supplemented from time to time by explanatory conferences; secondly, the "congresses," or reunions, of specialists from different parts of France and from other countries, for the study of social and economic questions. Both are in reality aspects of the same thing, though perhaps the one is of more special interest as a method of propaganda, the other as a method of research. The intimate relation of the two was recognized by the ministerial ordinance of June 9, 1887, which provided that, as a part of the "universal" exposition of 1889, there should be an exposition of social economy, composed of fifteen sections, and supplemented by the congresses and conferences already mentioned.*

Briefly, these fifteen sections, intended to facilitate the comparison and classification of results, were as follows: —

Section I. — Remuneration of Labor.

Forms and conditions, express or tacit, of contracts; periodicity and modes of payment; *primes*, or special allowances proportioned to quantity or quality of product, or to economy in raw materials and combustibles; agricultural contracts; remuneration in kind of farm laborers; employment of women and children in manufactories; medals, prizes, and other encouragements to industry, skill, and continued service; rate of wages and cost of living; settlement of disputes by arbitration and conciliation. In short, the best solutions given by the agricultural and other industries of different countries to the problem of "remuneration of labor," including also a special study of the legislation and jurisprudence of different countries touching the legal status of laborers, regulation and inspection of certain industries, liability of employer in case of accident.

* Subsequently organized by *arrêt ministériel du 3 août*, 1887.

SECTION II.—PROFIT SHARING, CO-OPERATIVE PRODUCTION.

Different systems adopted; distribution and employment of profits; rules and statutes; *métayage;* productive societies, composed of workmen; constitution and management; remuneration of labor, capital, and temporary employees.

SECTION III.—TRADE ORGANIZATIONS.

(*a*) Organizations composed of employers, of workmen, or mixed organizations of employers and employees, in agricultural as well as other industries. (*b*) Boards of conciliation, of arbitration, *prud'hommes;* their relations to disputes, contracts, apprenticeship. (*c*) Scientific and other societies for study of social and industrial questions; institutions created by such societies, inquiries, publications.

SECTION IV.—APPRENTICESHIP.

The contract; technical instruction in the workshop or in schools and courses established by patrons or by associations of workmen; schools of domestic economy [*écoles ménagères*]; societies for protection of apprentices; orphanages and establishments for children morally abandoned; courses of instruction in social and industrial economy, and practical working of institutions of *prévoyance.*

SECTION V.—MUTUAL AID SOCIETIES.

Friendly societies and *Knappschaften,* providing medicine, medical assistance, dispensaries, hospital treatment; indoor and outdoor relief; life, accident, and fire insurance; pensions in case of involuntary idleness or old age; burial funds; assistance in securing work.

SECTION VI.—BANKS OF PENSION AND LIFE ANNUITIES.

National banks of pensions for old age; different forms of pension and annuity established by the State, by employers in favor of workmen, by associations for mutual aid.

SECTION VII.—INSURANCE.

(*a*) Employers' liability and methods of insurance in case of accidents causing temporary or permanent incapacity or the death of employees; mutual insurance by voluntary subscriptions, by deductions from wages, or in accordance with State regulations; moral effects upon relation of workmen and employers in diminishing disputes; diminution of accidents. (*b*) Various systems of life insurances originating with workmen or employers; philanthropic and other societies. (*c*) Special forms of insurance against fire, hail, epizoötic, and other risks. (*d*) Statistics concerning institutions established by the State, by collective or by private enterprise, as to death-rates, accidents, losses.

SECTION VIII.—SAVINGS.

(*a*) National and postal savings-banks; school savings-banks; all similar institutions founded or directed by the State, provinces, departments, communes, chambers of commerce. (*b*) Different types of private origin; tontine societies, building societies, land societies, *Type de la Fournie*. (*c*) Systems of encouraging thrift, instituted by employers, either by special facilities for deposit, by advances for purchase of land or dwelling, or by acquisition of shares in the establishment.

SECTION IX.—DISTRIBUTIVE (OR CONSUMPTIVE) CO-OPERATION.

Different methods of organization and management; economic and moral results; relations to other institutions of mutual assistance, libraries and trade organizations; development of intelligence, of habits of regularity and economy; material and moral amelioration of the family; co-operative restaurants, bakeries.

SECTION X.—CO-OPERATIVE LOAN ASSOCIATIONS.

Credit in trade, manufacture, agriculture; banks of the Schulze-Delitzsch or the Raiffeisen type; agricultural associations, for the purchase of machinery, fertilizers, and seed, or for the loan of money; relations with trade organizations, with mutual aid, co-operative, and other societies; social status of members and clients; intellectual and moral results in libraries, courses of instruction, clubs, amelioration of the condition of the family; State interference, regulation, inspection, or administration.

SECTION XI.—LABORERS' DWELLINGS.

Cottages; collective dwellings for several families; construction by co-operative societies, building societies, and other associations of workmen, or by employers, in manufacturing centres; first cost, rents, methods of acquisition by part payments; moral and physical results in improved sanitary conditions; encouragement of construction by special exemptions or facilities accorded by the State or city governments; influence of fixed tenure upon family life, temperance, and thrift; illustrations by models of great institutions like the Godin *Familistère* at Guise, and by furnished cottages of natural size showing the different types and the cost of production.

SECTION XII.—WORKINGMEN'S CLUBS AND RECREATIONS.

Clubs, social, political, religious, commercial, literary, scientific, artistic; organization by workmen, by employers, or patrons; similarity or difference in social and industrial position, age and sex, of members; cost of administration, results; size and nature of libraries; sale of refreshments; temperance cafés; existence of gaming; occasional admis-

sion of families of members; debates, courses of instruction, and other distractions organized by the clubs, as boating, racing, bicycling, military drill, gymnasiums, choral and instrumental music.

SECTION XIII.—"HYGIÈNE SOCIALE."

(*a*) General laws, regulations, and statutes touching protection of young children; adulteration of food, sanitary regulations as to construction and inspection of dwellings, employment of women and children in factories; security of workmen against accidents (employers' liability); salubrity of workshops and of certain trades. (*b*) Measures taken by State or local authorities for suppression of alcoholism; Gottenburg system; limitation of dram-shops; purity of liquors; temperance societies; asylums; total abstinence; temperance cafés. (*c*) *Crèches;* protection and instruction of apprentices and minors; restaurants, refectories, baths, lavatories, established for use of employees.

SECTION XIV.—INSTITUTIONS CREATED BY EMPLOYERS.

In favor of their *employees:* intended to present a collective view of the efforts of employers "to improve the material and moral condition of their co-operators, and better to establish the solidarity of the two factors of production." The *arrière-pensée* which inspired this duplication of subjects scattered for the most part through other sections, may perhaps be inferred from the declaration of the president of the section that "this century and this country are misunderstood and calumniated by those who pretend that the workman has been the great sacrifice in the almost universal progress." In short, there was to be a revision from a special point of view of the preceding sections.

SECTION XV.—"GRANDE ET PETITE INDUSTRIE."

Grande et petite culture; concentration of industry in large establishments; efforts to perpetuate small workshops; displacements of domestic industries; division of the soil; intellectual, moral, and material condition under systems of large, of moderate, and of small farms; conditions of the *métayer;* relations of agriculture and manufacture; emigration and the movement of labor from the country to cities or to foreign countries. The family: receipts in money and in kind; expenses for food, clothing, recreation, and for institutions of savings and *prévoyance.*

Such, in brief, was the scope of the exhibition of social economy. Its relation to the exhibition as a whole is obvious. The exhibition is largely a study of production from the producer's point of view. From a sociological standpoint, it is an attempt to establish the relation of the material, intellectual, and moral advance of the worker to the advance in science, invention, art, and industry.

This purpose, conceived in a thoroughly scientific and comprehensive spirit, was announced with absolute clearness from the first. Alongside the great record of industrial progress was to be a parallel study of social and moral progress,— a study sufficiently exhaustive to furnish the data for scientific generalization, and sufficiently attractive, "decorative, and picturesque" to serve the purpose of popular instruction.

The difficulties besetting such an undertaking were enormous. To prepare a similar exhibition for students and economists would be simple enough. A library full of statistical reports, brochures, reading-desks, and facilities for critical research, would suffice. To plan an amusing economic exhibition for the world in general, and the world of sight-seers in particular, was quite a different thing. First of all, the administration wisely recognized that, for the most part, exposition-goers are bereft of all senses but one,— sight. Therefore, the abstractions of economic science, the beauties of profit-sharing, the blessings of sobriety and *prévoyance*, must be rendered visible. Secondly, it must be confessed that humanity in general is quite content to view the products of human labor (which are of interest) without much thought or inquiry as to the condition of the laborers: therefore, the abstraction must be so clothed as to catch the attention of the passer-by, and compel him to "stop and reflect." Finally, the commercial advantage and the self-satisfaction attaching to a grand prize, a gold medal, and a large amount of gratuitous advertising, were too considerable to admit of accepting quite at its own valuation the results of even the most single-eyed philanthropy. Hence the necessity of a general preliminary inquiry by a central and impartial authority, to discover the institutions actually existing and furnish a basis of comparison for choosing types to be exhibited, verifying the pretensions of the more ambitious, rewarding the merit of the less pretentious, and ultimately assigning the honors destined to commend the most meritorious to public attention and imitation. The special mechanism for this work consisted of the committees of admission for each section, composed of distinguished economists and specialists, with presidents and vice-presidents nomi-

nated by the minister; the committee of organization, consisting of the presidents of the sectional committees and the director-general of "exploitation"; and, finally, the departmental committees for the local inquiries. In the autumn of 1887, the director-general submitted to these departmental committees a formidable series of questions, based upon an extremely minute and exhaustive analysis of the institutions assigned to each section, with instructions to proceed with the responsible task of soliciting information, receiving every sort of evidence offered, "no one excepted," sending forms for responses to the proper persons, and finally submitting reports to the committee of organization from which the questions emanated. In these questions and instructions, no detail which could minister to the general effectiveness, attractiveness, and good taste of the exhibition, was too trivial or insignificant. There were suggestions as to size and construction of diagrams, charts, statistical tables, photographs of men and establishments, scales of comparisons for models and charts, use of colors, choice of mottoes, busts, decorations, — in short, a thousand and one details, germane, it would seem, to decorative art rather than to economic science.

The actual seat of the exposition comprised about an acre of ground in the Esplanade des Invalides, opposite the colonial exposition. It was disposed as follows. In the midst, a so-called workingmen's club,— a hall used for conferences, capable of seating three hundred people, furnished with reading tables, bookcases, pamphlets, and documents, adorned with the insignia of various clubs, Christian associations, and the like, and marked by the absence of any considerable evidence of interest on the part of existing workingmen's organizations in France. Near by, a somewhat unique and original feature of the exhibition, several workmen's cottages, full-sized and furnished, constructed by certain societies after the type adopted for employees. To the left, two modest "pavilions" devoted to profit-sharing. One, for the merchants and manufacturers, illustrated different systems: the other, decorated with great taste, was devoted almost exclusively to the famous *Maison Leclaire*. A third pavilion was reserved for foreign exhibitors — Belgian, English, American — and for the

expositions of certain municipalities; a fourth, for the society of *assurance urbaine*. In the foreground, a descriptive monument, illustrating the growth of co-operation in England; also, a not too attractive "economic restaurant," as a unique feature of the Exposition as a whole, destined to be "for the crowd a serious element of attraction." Finally, to the right, an extensive gallery, some sixty metres in length by twelve in breadth, devoted to the general exhibition of the fifteen sections.

The preliminary inquiry concluded, the Committee of Organization was then in a position to distribute among the sectional committees of admission something like fourteen hundred square metres of wall-space, with a corresponding area of tables, cases, book-shelves, placed against the wall at a convenient height, and destined for the reception of documents, reports, pamphlets, for distribution, sale, or consultation. Embarrassed by the wealth of evidence placed at their disposal, compelled to resort to every possible device for increasing or utilizing available space, the committee proceeded with the delicate task of selection, notifying each exhibitor of the space at his disposal, and submitting diagrams and suggestions as to the methods already mentioned of securing enough of uniformity and enough of variety to facilitate comparison and to avoid "coldness, abstraction, and obscurity."

Just how far the exposition accomplished all these ambitious purposes, it is very difficult to say. *A priori*, it was to be feared that such an enterprise in moral economics and decorative sociology would degenerate into either a sort of international bill-board and advertising agency or an economic kindergarten. That it escaped both these extremes is perhaps tribute enough to the national ingenuity and facility in the language of symbolism. Certain it is, in any event, that the abstractions were made visible and the principles of industrial solidarity symbolized to such an extent that, if it was not possible to erect a shrine to the goddess of profit-sharing and *prévoyance*, it was still possible to study reverently the annual inscriptions of progress on the somewhat too sepulchral monument to English co-operation, to read the romance of an industrial partnership upon the daintily decorated little temples

Leclaire, to study the remarkable history of Godin's experiment by the aid of a grand model of the *Familistère* at Guise. In fine, it is no exaggeration to say that the enthusiast might easily have added a rose to the tributes which adorned the busts of Monsieur and Madame Boucicault, placed in what seemed very like a shrine to the industrial philanthropies of the *Bon Marché* and the memory of its founders.

Not that all this writing on the wall made the average Philistine "stop and reflect." On the contrary, he went his way to the Eiffel Tower or the "economic restaurant," without even yielding to the seductions which the rare luxury of comfortably upholstered benches sometimes added to the contemplation of the more arid statistics. Generally, too, he passed directly in front of the student who really wanted to see, who found the hundreds of square yards of information very hard on neck and eyes, the hundreds of books, pamphlets, and reports which were nailed to the little tables bewilderingly numerous and tantalizing, and the stream of people simply "doing" the Exposition a very great annoyance, who finally quitted the exposition of social economy profoundly impressed with his own ignorance and with the necessity of waiting till some official report should place the great mass of heterogeneous information more at his disposal. This feeling of perplexity was, perhaps, a little stimulated in rare instances by the predominance of decoration and motto over facts, in so much that sometimes,—as in the exhibit of the Knights of Labor, for example,—a generous declaration of purposes and an unfortunate neglect to tabulate detailed results lent color to the unpleasant suspicion that, in spite of all precautions, the sections had not escaped some slight exploitation in the way of gratuitous advertisement of things hoped for rather than seen. On the other hand, compared with other portions of the great Exposition, it is certain that the educational value of the sociological sections was very great. Above all, it is to be noted, as indisputable evidence upon this point, that, as a method both of instruction and of research, it has commended itself in an eminent degree to the many distinguished economists who watched and aided the progress of the exposition. So conspicuous is this interest that continuous efforts have been

made to perpetuate the exhibition in some permanent form, as a museum and repository destined both for the use of specialists in comparative research and for popular instruction. The possibility of establishing a museum of comparative sociology, thus applying to economic science the method adopted by almost every other, was foreshadowed not only in the great care taken to secure uniformity in methods but also in the hope, expressed by the presidents of certain sections, that exhibitors would generously hold themselves ready to abandon their exhibits in favor of such an enterprise.

Of the explanatory conferences given from time to time by presidents of sections, it is not necessary to speak; for, however valuable they may be as printed reports, their immediate educational effect was necessarily limited to the fortunate few who happened to be in attendance. With the congresses, however, the case is different. The public was not admitted. Composed of accredited delegates, specialists, members of scientific associations, they were essentially reunions of men and women devoted to serious work. Organized under government direction and patronage, assigned to public halls according to an official programme, they gained special significance from the exceptional opportunities which the exposition presented for such meetings of more or less distinguished specialists from different parts of France and from other countries. Unfortunately, it must be admitted that from time to time these congresses suffered not a little from the evil of availability, people whose pleasure or business took them to Paris being pressed into the service of science and philanthropy by societies whom accident or impecuniosity deprived of better representatives. On the whole, however, these congresses, which followed closely the subjects of many of the economic sections, were thoroughly dignified and impressive,— little short of an international university to the student of social and economic science privileged to follow their deliberations. They represented almost every aspect of sociological inquiry, ranging from international arbitration to bimetallism, public assistance, co-operation, and *prévoyance*. To those who have looked upon the great Exposition as an apotheosis of iron, electricity, and advertising, the existence of these congresses, no

less than of the sociological sections, cannot fail to be a gratifying testimony to the vigor with which moral and social ideals demanded recognition.

I have dwelt thus upon the details of organization because it is the method of scientific research which is of immediate significance in view of the approaching American exhibition in 1892. A similar unity of effort on the part of leading economists and specialists, of statistical, economic, and philanthropic societies, and a similar wisdom and forethought in early organization and in systematic study of details, would insure for the United States — nay, for the continent, probably — a concentrated view of individual and associated attempts to solve industrial problems, which would be of incalculable value both to the practical and to the theoretical student. Fortunately, much of the necessary mechanism already exists in the national and State bureaus of labor statistics. True, the possibilities of an international consensus of opinion evoked by congresses similar to those already mentioned may be somewhat modified by the fact that, for practical purposes, the distance from Europe to New York is greater than the distance from New York to Europe. Still, the absence of foreign delegates could, in a measure, be compensated by special studies based upon the results of investigations already made in other countries,— a compensation worthy of serious consideration, if the foreign delegates should find as much difficulty in speaking English as the average English-speaking delegate seems to find in speaking French. Whether a national museum of social economy would result is perhaps of less importance; but, even without the example of the French exhibition to follow, it would be not only a matter of profound regret, but an evil omen as a sign of the times, if at the eleventh hour of the nineteenth century an exposition dedicated to a hundred years of progress forgot to give preeminent importance to a study of the urgent social questions upon which the verdict of future success or failure will surely depend.

E. Cummings.

THE ECONOMIC MOVEMENT IN FRANCE.

We must admit that Political Economy in France has lost, during the past ten years, much of the ground which it had gained in earlier years. Public opinion is against us; the legislature is against us. The fallacies which we had flattered ourselves to have rooted out have revived, like weeds mowed down by the farmer, with greater vigor than ever. For the country, we must deplore this state of things: it must bring trying days in the future. For Political Economy, we have hopes that the present experience will be more salutary than hurtful. It is an ill wind that blows no good, says the proverb. The temporary triumph of our opponents has caused us to retrace our steps; and the change which is now taking place among us will perhaps serve to regain in the near future the influence which we have lost.

Nothing indicates more clearly the movement of economic thought than the disposition to make concessions to one or other of two opposing principles,—liberty and regulation. The problem here suggested does not, to tell truth, admit of any absolute answer. There are certain liberties which no one would contest, and so are there certain regulations. To give a simple and typical example: in our streets, pedestrians go and come as they will; vehicles, however, must keep to the right. Ingenious arguments might be advanced wherewith to prove that pedestrians ought to submit to the same restrictions as vehicles, or that vehicles should have the same freedom as pedestrians; but the good sense of mankind will be little influenced by such empty rhetoric. Unfortunately, there are an infinite number of cases where it is much more difficult to draw the line between what should be permitted and what should be forbidden: whence the ceaseless conflict between the spirit of regulation and the spirit of liberty.

The economists of the older French school had a very simple mode of disposing of the difficulty: for them, every law was suspicious. The dangerous theory of the Paternal State

was met by them with the theory, equally dangerous, of *l'état ulcère*. The phrase, ascribed to Jean Baptiste Say, is not to be found in his writings. Bastiat might well have penned it. This radical mode of simplifying the problem by suppressing it has still adherents among us. I will mention but one, M. de Molinari, the able successor of Joseph Garnier as editor of the *Journal des Économistes*. M. de Molinari, often a profound thinker, always an attractive writer, likes to treat the State as a policeman on a great scale, of service only for keeping watch and ward: in other words, as a sort of dealer in good order, to whom every other industry should be peremptorily forbidden. Surely, this restricts unreasonably the natural sphere of the public power. Every one of the concentric associations which surround us — family, town, country, the human race — has its own circumference, which should be neither too greatly enlarged nor too narrowly restricted. Is it not obvious that a civil code, a commercial code, is as necessary in a civilized country as a criminal code? The mere fact that the State makes the laws, that it may make good laws or bad laws, shows that it must necessarily play a considerable part in the economic life of a country. I am even disposed to admit that the minimum of its functions should increase as life becomes more complicated, and as the diversity of interests becomes greater. That most French economists of the new generation are disposed to take some such view was recently shown in the course of a formal discussion at the *Académie des sciences morales et politiques*. There were at least two good reasons for not maintaining the exaggerations of former days: first, that they were exaggerations; second, that moderate persons were roused to opposition by them, even led to turn against us.

But we have by no means concluded with the Minotaur (to use another epithet which our predecessors applied to the State) a treaty of peace, or even an armistice. The struggle continues, and we are far from having disarmed; for the State is by no means content with the ground which we have ceded to it. A story is told of Louis XIV. that, while playing chess with one of his courtiers, he suddenly called on Boileau to decide on a move of his which was declared to be doubtful. "Sire," said Boileau at once, "your Majesty has lost." And,

as a hubbub arose at this off-hand answer, "Surely," he said, "it must be that your Majesty has lost, for otherwise Monsieur le Duc would never have suggested that the move was doubtful." The present situation of the State is like Louis XIV.'s. Its encroachments, its excesses, are such that, in every case where a conflict rises between public and individual action, we may say with confidence, however disposed we may be to yield to the State the true functions of government, "It is you who are in the wrong." Under these circumstances, it is easy to see why the relativity of our principles does not prevent us from protesting and combating with as much energy as the radical economists of former days.

Our position, then, is clear enough; and State Socialism in France could not adopt, as it has done in Germany, the title of "Socialism of the Chair." It is fought at the *Collège de France* as well as at the *Conservatoire des arts et métiers;* at the *Ecole des mines* and at the *Ecole des ponts-et-chaussées;* at the *Ecole des hautes études commerciales* as much as at the *Ecole libre des sciences politiques.* It is only in certain of the law faculties that the instruction in political economy, recently introduced, sometimes fails to ring true. The young instructors who have been charged with it, somewhat at haphazard, do not all take the same view of their duties; and I could name two or three of them who have not been able to substitute for the study of statute law the study of economic law. Others of them, however, have re-enforced very effectively the small band of liberal and orthodox economists, and have helped them to make face to the enemy on every occasion.

We are the less able to separate our discussions from the contentions of every-day life, because our writers on pure theory have become few. We think, but we act. Look through a list of our best known economists, of those who best deserve to be known, and you will find that all of them pay much more attention than did their predecessors to questions of fact. Léon Say is not, like his famous grandfather, content to teach and to write. Thrice minister, senator one day, deputy the next, president of some thirty societies, he is as much a man of affairs as a man of science. Frédéric Passy in the Chamber, Courcelle-Seneuil in the Council of State, Léon

Donnat in the Municipal Council of Paris, all during the last few years have been steadily engaged in public life. So, before them, were Parieu, Jules Simon, Cochut, Clamageran. The science of M. Paul Leroy-Beaulieu, great as is its theoretical value, is yet essentially practical; and the *Économiste français* is read with equal attention by men of business and by scholars. Emile Levasseur, Maurice Block, Cheysson, Juglar, Coste, Yves Guyot, are statisticians as well as economists. Levasseur, moreover, is a geographer, and Cheysson an engineer; Baudrillart is a specialist in agriculture, Stourm in finance; Claudio Jannet is an historian, Jourdan a writer on law; and so forth. We have a double right, therefore, to take part in the discussion of all economic problems, and we do not fail to exercise that right.

Nevertheless, it is quite certain that we do not always get the upper hand. What a defeat, for example, have we not met in the matter of freedom of trade! Not long ago it was natural to suppose that universal suffrage would bring the definitive triumph of free trade. The war tariffs of the First Empire had been maintained, in times of profound peace, under the Restoration and under Louis Philippe; but this was supposed to be due to the limitation of the suffrage. The capitalists and the producers then had control of the legislative bodies, and it was not surprising that our laws should sacrifice the interests of thirty millions of Frenchmen to the apparent or real interests of a million or two of privileged persons. To be sure, the republic of 1848, which introduced universal suffrage, made no change in tariff matters; but it might fairly be said that lack of time alone prevented it from giving due attention to the interests of the people. After the republic came the Second Empire, which finally broke with the prohibitory system, and gave our foreign trade the enormous impetus with which we are all familiar. How could we help believing that this great economic reform was the natural result of the preponderance which the reform of the suffrage gave to the consumers, whose rights had so long been sacrificed? It would then have seemed rash to predict that, as a result of this same universal suffrage, protection would revive from its ashes before the close of the century. Yet this is

what has happened. The readers of the *Quarterly Journal of Economics* need not be told what delusions prevail among the masses on this subject. The number of persons who really profit from protective duties is small, but the number who think they do is large; and both classes are roused to honest wrath when we set to work to criticise a state of things which brings them, or seems to bring them, such agreeable largesses. On the other hand, the economists had perhaps made the mistake of promising too much. The wealth of France never increased as fast as it did under the Empire; but those who had been promised that life would become easy complained that in fact living had become more expensive. Then the agricultural crisis came, not to speak of other crises; and the country, seeing that matters went ill, came to the conclusion that the *régime* which we had recommended was good for nothing. As for the State, this great devourer of funds likes little to be deprived of the one tax which, in France as in other countries, has always had enthusiastic and powerful advocates. Such are the reasons why the worst of taxes are the hardest to die. It required the despotic power of an emperor to cause the country to submit to a temporary deprivation of them. French democracy had no sooner recovered the fulness of its power than it repossessed itself of the delightful tax which promises to give back twenty sous for every fifteen that it takes. The general tariff of 1881 was already high. The agricultural population, which in truth was really disturbed in its habits by the double invasion of grain from the west and cattle from the east, succeeded in bringing about in 1885, and again in 1887, an increase in the import duties on grain and on cattle. The rate of increase is significant. For many years after 1861 the duty on grain had been no higher than sixty centimes a hectolitre. The act of March 28, 1885, raised the duty to five times this amount; and the act of March 29, 1887, again raised it to the present rate of five francs a hectolitre, or about thirty-five cents a bushel. On cattle they have done better, or rather worse, as these figures show: —

	Duty for each ox,	*cow,*	*calf.*
Tariff of 1853	3.00 francs	1.00 francs	.25 francs
" " 1874	3.74 "	1.25 "	.31 "
" " 1881	15.00 "	8.00 "	1.50 "
" " 1885	25.00 "	12.00 "	4.00 "
" " 1888	38.00 "	20.00 "	8.00 "
" " 1888, for Italy,	60.00 "	40.00 "	15.00 "

These successive enhancements of duty have been possible only because our commercial treaties did not include in their stipulations the duties on grain and on cattle. Manufacturing industries for the present are tied down by the network of these treaties. They have no real ground for complaint; yet they await with impatience the year 1892, when they will no longer be hampered by international agreements. Who can say that after three years the duties on iron — duties quite after the American pattern, for they range from forty to fifty per cent. on the value — will not be raised? Or, for that matter, the duties upon textile fabrics? The elections which have just taken place leave no doubt whatever as to the restrictive tendencies of the new Chamber: everybody has promised to protect everybody. This is almost the only point on which there was general agreement among the various candidates, monarchists or radicals, liberals or Boulangistes.

The only consolation of the French free traders is in the absurdities, the contradictions, the inconsistencies, which this reactionary policy encounters. In 1888 our deputies, wishing each to satisfy the other, voted a heavy duty on Indian corn, and thereupon proceeded to exempt from that duty by successive amendments: first, consumption in the arts; second, consumption in agriculture; and, third, consumption for food. Finally, at the close of the session, everything had been excepted from the duty; and the Chamber had to submit to the humiliation of reconsidering the original vote.

This powerful ally, Impossibility, has given us still more efficient aid in other directions, notably in the regulation of sugar duties and bounties, and in railroad matters.

For some time all the governments of the Continent have been trying both to encourage the production of beet sugar and to get from it as large a revenue as possible. Thence the

constant shiftings in policy, the growth of more and more artificial devices. In France there have been some half-dozen laws on sugar in the last five years, and still another is already announced. By the act of 1884 the basis of the excise on sugar had been made the quantity of beets treated, and not, as before, the quantity of sugar extracted. Thereafter the manufacturers had only to select richer beets in order to make a considerable part of their product practically free of tax. The public continued to pay the excise on the total consumption; but the heavy tax was divided between the treasury and the manufacturers. The manufacturers pocketed forty-four millions of francs in 1886, seventy-one millions in 1887, ninety millions in 1888. The sugar men were enthusiastic over this very happy innovation, and laughed in our faces when we represented that it was not the object of taxation to enrich the few at the expense of the many. After a while, of course, money began to grow scarce. Ten years ago, the French budget showed, as does the budget of the United States now, an enormous surplus. The follies of the State, its rash ambitions, have brought about the exact reverse of this state of affairs; and, as the subsidies granted to the sugar manufacturers served by so much to increase the deficit, the Minister of Finance seems to have decided to discontinue them.

In railroads, difficulties of the same sort brought to a sudden end an enterprise even more rash in character. Up to 1878, the railroad policy of France had been equally removed from the American system, which abandons railways to private industry, and from the German system, which makes them once for all a public industry. The great agreements of 1859 had been, so to speak, a contract of marriage between the State and the railroad companies; and this union had in many ways yielded excellent results. After the political disturbances of 1877, the government, by way of diverting public attention, brought forward a plan of public works which in its first form was in no way excessive. It has been called the Freycinet plan, and is still so known.* What was then prom-

*M. de Freycinet, an engineer by profession, was at that time Minister of Public Works. He is now Minister of War.

ised would have been accomplished by this time if the State had contented itself with being simply the originator and promoter of the scheme. But it was the period when the men in power believed that the State is capable of everything and wished that the State should do everything,— especially so long as they represent the State. Private industry was officially notified that it would be dispensed with. Loans began, in three per cent. redeemable bonds; the public workshops were opened. The result was what might have been predicted. The State became the sole builder of railroads and canals. Everybody wanted them; and the government, not daring to say no to any one, added so many new lines to the first scheme that the total charge, originally set at four milliards of francs, finally amounted to ten. The least useful roads were those most persistently begged for; and the upshot of it is that now we possess, scattered here and there through the country, the so-called "electoral railroads," lines which cost high and lack only two things to enable them to pay their charges,—passengers and freight. In most cases, a tramway would have sufficed, and more than sufficed. I once found myself the only passenger in a train on one of these youthful railroads; and, on expressing my surprise to the conductor, I remember his answering, in a tone of great dignity: "Why should you wonder at your being the only passenger? Yesterday we had none at all!"

The State, moreover, was not content with this building across country: it went in for purchase. It has bought, and at much too high a price, a set of small bankrupt lines in the west, and has united them under the name of *Réseau de l'Etat*. It proved a sad enterprise. The system has never been able to pay its expenses, and brings a heavy charge on the budget, ill-disguised by devices in the accounts. At the same time the government declared open war against the six great companies, and announced its intention of buying them out on its own terms. The attack was violent. The notorious Wilson, son-in-law of the President of the Republic, directed the fire. But the ammunition of the assailants — that is, their cash — had begun to give out, even before the crash of 1882 came on them, and made their situation embarrassing in

the extreme. It was they, and not the besieged, who were obliged to capitulate. The companies, by way of encouraging the Deputies and Senators to accede to their terms, had given these gentlemen the free use of all railways in France at the nominal rate of ten francs a month. This was a sort of preamble to the new arrangement between the State and the companies, which was concluded by the contracts of 1883. These contracts imposed upon the companies, for the present, certain heavy charges. So far as our finances are concerned, they serve only to postpone to the future very serious difficulties; but at least we owe it to them that the State has not succeeded in setting its heavy hand on some thirty thousand kilometres of railroad and a quarter of a million more of citizens.

I have shown that the French economists, beaten in the field of free trade, have barely failed of defeat in that of transportation. Elsewhere our defence has been more fortunate, and the enemy has in vain endeavored to make us give way.

In the monetary question our success has been unequivocal. The great fall in the price of silver had compelled us to break with our bimetallic system, or at least, by suspending the coinage of our silver dollars, to stop the free coinage of both metals. This was no more than reasonable; and French economists, with very few exceptions, agree that it would be foolish to try by laws or treaties to reconstruct the artificial system whose break-down has been the conclusive proof of its instability. We are not monometallists in the sense of wishing to exclude silver from circulation in France. Our three milliards of five-franc pieces do not trouble us, nor does our copper money: in this sense, we are not only bimetallists, but trimetallists. But we do not admit that two different yard-sticks can act at the same time as measures of value; and we believe that it would be chimerical and harmful to endeavor to re-establish by force a precarious equilibrium between silver and gold. There are those, however, who tell us that this would become the best of worlds if only France, Germany, England, and the United States would permit free coinage of both metals at the ratio of 15½ to 1, both metals to be full legal tender. Among the eighty odd congresses which gathered at Paris in connection with our Exposition, there was a mone-

tary congress, at which the champions of the double standard hoped to make a decisive demonstration in favor of their principle. They came from London and Brussels, from Berlin and New York, from Madrid and from the Hague, and certainly made a formidable array,— Grenfell, De Laveleye, Dana Horton, Foxwell, Allard, Otto Arendt, Moret, and others. But the small squad of French economists who were present at the congress (Levasseur, Fr. Passy, Cochut, Juglar, Coste, Du Puynode) repulsed the attack triumphantly. M. Cernuschi, who was in command of the bimetallists, had to cover the retreat of his troops by offering a prize of ten thousand francs for a set defence of the Cernuschian ideas. Even then he had to submit to the disappointment of finding that Mr. Goschen, the Chancellor of the Exchequer, whom he had nominated as one of the judges on his prize, was so prudent as to decline this delicate task. Mr. Goschen may have remembered Lord Beaconsfield's remark,— that more men have been made mad by the monetary question than by love.

The monetary congress was a public gathering, open to expressions of opinion from any one. Another congress, of quite a private and exclusive sort, was distinguished by the presence of the most prominent representative of American socialism, Mr. Henry George. The opponents of the right of property in France make much noise, and your countrymen no doubt had taken at their word the revolutionary programmes which every once in a while promise us the nationalization of the land at the start, and at the end a grand winding up of the affairs of society. I suspect that Mr. George's illusions were thoroughly dispelled. Our socialists find some applause for their eloquence in certain workingmen's quarters, but their voice rings much less loud in the France of to-day than it did in the France of forty years ago. Agrarian socialism can find little favor with the masses in a country where, out of thirty-eight millions of inhabitants, seven or eight millions are already landed proprietors. Moreover, our peasants are not less shrewd than the rest of us; and when they see that the men who are most eager to make the State the absolute master of all our interests are the very men who have always opposed with the utmost violence and recklessness every successive

government, the inconsistency of the thing puts them on their guard. Although many here are of a different opinion, for myself I think it certain that France has less to fear of socialism from below than of socialism from above.

In this presentation, which is both too short and too long, I wished to touch only questions which are essentially economic, and to leave aside the social questions. On both social and economic problems the French school tends to abandon the rigid lines of former days, and reacts against the flagrant excesses of individualism. Along the middle of our century, Lamartine reproached the followers of J. B. Say with having no soul. I believe he maligned them; but certainly such a reproach would be even less warranted now than in Lamartine's day. The spirit of fraternity spreads, and we have learned to speak to men not less of their duties than of their rights. From this point of view, our exposition on social subjects, which was hidden in a corner of the great exposition of industry and art, was in many ways attractive and interesting to those friends of the working classes who had leisure to study it. It has now come to be the turn of America to celebrate, by a demonstration of the same sort, an anniversary even more important than that of 1789; and I venture to make an appeal to the intelligent solicitude of the economists of the United States that the social subjects may have their place in the great exposition of 1892. But I anticipate somewhat in expressing this wish. The time will be more opportune to make the appeal when we shall see published (they may be expected within a few months) the sixteen special reports of the jury on prizes for social subjects, and especially the official introduction of the president of the jury, M. Léon Say.

A. DE FOVILLE.

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APPENDIX.

STATISTICS ON THE POPULATION OF AMERICAN CITIES.

I.

Number of Cities, 1790–1880.

From the Census of 1880, vol. i. p. xxix.

	8,000 to 12,000	12,000 to 20,000	20,000 to 40,000	40,000 to 75,000	75,000 to 125,000	125,000 to 250,000	250,000 to 500,000	500,000 to 1,000,000	Total.
1790 . .	1	3	1	1					6
1800 . .	1	0	3	2					6
1810 . .	4	2	3	0	2				11
1820 . .	3	4	2	2	2				13
1830 . .	12	7	3	1	1	2			26
1840 . .	17	11	10	1	3	1	1		44
1850 . .	36	20	14	7	3	3	1	1	85
1860 . .	62	34	23	12	2	5	1	2	141
1870 . .	92	63	39	14	8	3	5	2	226
1880 . .	110	76	55	21	9	7	4	4	286

II.

Comparison of Urban and Rural Population, 1790–1880.

Compiled from the Census of 1880, vol. i. pp. xxix, xxx, 670, vol. ii. p. xxii; Compendium, vol. i. p. 8.

	Total Cities 8,000.	Total Urban Population.	Total Population.	Percentage of Urban to Total.
1790	6	131,472	3,929,214	3.3
1800	6	210,873	5,308,483	3.9
1810	11	356,920	7,239,881	4.9
1820	13	475,135	9,633,822	4.9
1830	26	864,509	12,866,020	6.7
1840	44	1,453,994	17,069,453	8 5
1850	85	2,897,586	23,191,876	12.5
1860	141	5,072,256	31,443,321	16.1
1870	226	8,071,875	38,558,371	20.9
1880	286	11,318,547*	50,155,783	22.5

* Adding all cities of from 4,000 to 8,000 would make this total 12,936,410.

III.

Present Population of Great Cities.

	Bradstreet's Calculation.*				Foster's Calculation.†	World's Calculation.‡
	Population, 1880.	Ratio, 1880.	Vote, 1888.	Population, 1888.	Population, 1888-89.	Population, 1888.
1. New York	1,206,299	1 to 5.87	270,194	1,585,529	1,676,140	1,500,000
2. Philadelphia	847,170	1 to 4.93	205,747	1,014,332	1,014,332	1,043,698
3. Brooklyn	566,663	1 to 5.29	147,868	782,221	805,885	757,755
4. Chicago	503,185	1 to 6.06	123,475	748,258	802,651	850,000
5. Boston	362,832	1 to 6.74	65,399	440,789	415,000	425,000
6. St. Louis	350,518	1 to 7.24	56,462	414,431	449,160	500,000
7. Baltimore	332,313	1 to 5.93	85,469	507,004	490,000	480,000
8. Cincinnati	255,139	1 to 4.79	63,706	305,151	330,000	280,000
9. San Francisco	233,959	1 to 5.76	55,370	328,931	350,000	305,000
10. New Orleans	216,090				260,000	262,000

* From *Bradstreet's*, December 15, 1888, p. 804. Based on a comparison of the presidential vote cast in 1880 with the population by the Census of 1880. The ratio obtained is applied to the vote of 1888.

† *Report of the Providence Library*, 1888, Appendix, p. 42. Based on municipal reports or semi-official estimates procured by correspondence.

‡ *The World Almanac*, 1888, p. 173. Based on estimates made direct by mayors of cities.

IV.

Origin of Urban Population (50 Largest Cities).

Compiled from the Tenth Census, vol. i. pp. 536-539.

	Foreign Born.	Born in State.	Born in U. S. out of State.	Total Native.	Total Population.
1. New York	478,670	647,299	80,330	727,629	1,206,299
2. Philadelphia	204,335	554,449	88,386	642,835	847,170
3. Brooklyn	177,694	344,324	44,645	388,969	566,663
4. Chicago	204,859	197,728	100,598	298,326	503,185
5. Boston	114,796	196,256	51,787	248,043	362,839
6. St. Louis	105,013	173,453	72,052	245,505	350,518
7. Baltimore	56,136	242,050	34,127	276,177	332,313
8. Cincinnati	71,659	151,447	32,033	183,480	255,139
9. San Francisco	104,244	78,144	51,571	129,715	233,959
10. New Orleans	41,157	151,086	23,846	174,933	216,090
Ten largest cities	1,558,563	2,736,236	579,375	3,315,612	4,874,175
11-15. Five cities, — Cleveland, Pittsburg, Buffalo, Washington, Newark	209,854	419,819	125,797	545,616	755,470
16-24. Nine cities of 125,000 to 75,000	265,241	511,949	138,936	650,885	915,126
25-45. Twenty-one cities of 75,000 to 40,000	255,616	622,965	181,410	804,375	1,059,991
46-50. Five cities below 40,000	41,673	96,666	50,802	147,468	189,141
Fifty largest cities	2,330,947	4,387,635	1,076,320	5,463,955	7,793,903

V.

Derivation of Foreign Population.

Compiled by Miss Gleason from the Census of 1880, vol. i. pp. 452-455, 492-495, 538-541, 670-671; and from the Compendium, vol. i. pp. 452-463.

	The East.	Europe.										British America.	Spanish America.	Total.		
		Scandinavia.	German Empire.	Magyar.	Slav.	France.	*Total Latin.*	England and Wales.	Ireland.	Scotland.	*Total British.*			Foreign.	Native.	Population.
1. New York	1,291	5,190	163,482	4,101	21,664	9,910	11,344	30,593	198,595	8,683	237,935	7,004	3,034	478,670	727,629	1,206,299
2. Philadelphia	338	1,166	55,769	192	1,068	2,588	2,022	26,935	101,808	5,696	134,522	2,354	977	204,335	642,835	847,170
3. Brooklyn	390	4,536	55,339	81	840	1,936	2,677	20,749	78,814	4,682	104,291	4,363	1,213	177,694	388,969	566,663
4. Chicago	455	24,273	75,205	300	18,344	1,590	2,114	13,767	41,411	4,152	62,374	13,914	303	204,859	298,326	503,185
5. Boston	394	1,902	7,396	38	854	795	1,871	9,219	64,793	2,662	76,729	23,156	215	114,796	248,043	362,839
6. St. Louis	156	960	54,901	173	3,181	2,138	2,443	6,453	28,536	1,309	36,309	2,091	185	105,013	245,505	350,518
7. Baltimore	64	308	31,051	47	1,885	415	539	2,372	14,238	591	17,211	450	359	56,136	276,177	332,313
8. Cincinnati	102	118	46,157	106	572	1,471	1,535	4,465	15,077	650	19,202	1,182	70	71,659	183,480	255,139
9. San Francisco	22,618	3,521	19,928	128	1,335	4,160	4,998	7,795	30,721	2,243	40,772	3,860	2,273	104,244	129,715	233,959
10. New Orleans	183	302	13,974	37	163	6,882	7,815	1,833	11,708	426	13,970	368	526	41,157	174,933	216,090
Total for Cities, 1-10	25,991	42,436	379,172	5,203	49,906	31,885	37,458	124,241	588,691	32,094	322,315	58,742	9,155	1,558,563	3,315,612	4,874,175
Cities . . . 11-15	262	1,920	90,735	1,055	8,332	3,143	434	26,114	59,277	5,237	90,675	11,642	261	209,854	545,616	755,470
Cities . . . 16-24	426	2,782	113,860	241	7,217	3,555	823	16,522	7,126	7,116	103,105	20,894	250	264,641	650,485	915,126
Cities . . . 25-45	552	11,401	52,511	203	3,414	2,486	877	36,162	104,163	7,175	147,858	35,027	504	255,616	804,375	1,059,991
Cities . . . 46-50	376	6,238	9,142	50	246	3,182	101	6,163	15,302	1,479	23,134	7,139	214	41,673	147,468	189,141
Total, 50 Cities,	27,607	63,877	645,450	6,752	69,115	49,751	39,693	209,202	774,549	53,101	687,087	133,444	10,384	2,330,347	5,463,556	7,793,903
In all U.S.	108,835	440,262	1,966,742	11,526	169,840	106,971	180,200	745,978	1,854,571	170,136	2,772,169	717,157	80,589	6 679,943	43,475,840	50,155,783

VI.

Status of the Population of New York City, 1875.

Compiled from the Census of New York, 1875, pp. 117-119.

Ages.	Males.		Females.	
	Total.	Native.	Total.	Native.
Under 5	63,000	63,000	61,000	61,000
5 to 9	55,000	51,000	55,000	51,000
10 to 14	48,000	42,000	49,000	43,000
15 to 19	50,000	40,000	58,000	45,000
20 to 24	48,000	29,000	59,000	22,000
25 to 29	49,000	19,000	56,000	20,000
30 to 34	46,000	14,000	45,000	14,000
35 to 39	41,000	11,000	39,000	10,000
40 to 44	34,000	8,000	33,000	17,000
45 to 49	26,000	6,000	24,000	5,000
50 to 54	21,000	5,000	21,000	5,000
55 to 59	11,000	3,000	11,000	3,000
60 to 64	9,000	2,000	11,000	3,000
65 to 69	4,000	1,000	6,000	2,000
70 to 74	3,000	1,000	4,000	1,000
75 to 79	1,500	500	2,000	1,000
80 to 84	700	300	1,300	500

VII.

Status of the Population of Boston, 1885.

Compiled from figures furnished by the Massachusetts Bureau of Statistics of Labor.

Males.

Ages.	Born in Massachusetts.	Born in other parts of U.S.	Total Native.	Foreign.	Sum Total.
Under 1	3,476	37	3,513	24	3,537
1-4	13,351	480	13,831	550	14,381
5-9	15,165	969	16,134	1,642	17,776
10-13	11,219	980	12,199	1,320	13,519
14-19	14,061	2,028	16,089	3,563	19,652
20-29	19,147	6,668	25,715	13,530	39,245
30-39	10,580	6,406	16,986	14,471	31,457
40-49	5,661	4,634	10,295	12,143	22,438
50-59	3,263	3,004	6,267	7,144	13,411
60-79	2,865	2,238	5,103	5,009	10,112
80-	214	136	350	285	635
Unknown,	2	10	12	7	19
Total	99,004	27,490	126,494	59,688	186,182

Females.

Under 1	3,564	41	3,605	25	3,630
1-4	12,893	463	13,356	545	13,901
5-9	14,955	1,024	15,979	1,726	17,705
10-13	11,447	1,017	12,464	1,351	13,815
14-19	14,227	2,275	16,502	4,968	21,470
20-29	20,057	6,671	26,728	19,579	46,307
30-39	10,857	6,270	17,127	16,358	33,485
40-49	5,972	4,994	10,966	12,949	23,915
50-59	3,474	3,207	6,681	8,789	15,470
60-79	3,875	2,901	6,476	6,795	13,271
80-	448	256	704	514	1,218
Unknown,	8	8	16	8	24
Total	101,469	29,127	130,000	73,607	204,211